Department of Energy
Richland Field Office
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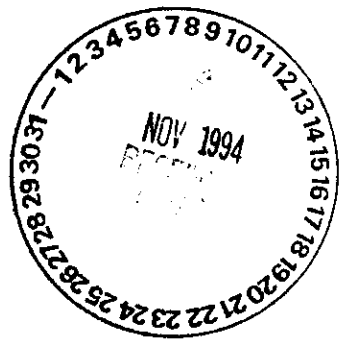

Mr. David L. Lundstrom
200 Area Section Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 W. Fourth Avenue
Kennewick, Washington 99336-6018

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352-0539

Dear Messrs. Lundstrom and Sherwood:

TRANSMITTAL OF THE 216-B-3 EXPANSION PONDS CLOSURE PLAN, REVISION 2 (D-2-5)

The enclosed DOE/RL-89-28, "216-B-3 Expansion Ponds Closure Plan, Revision 2 (D-2-5)," and the 216-B-3 Expansion Ponds Closure Plan, Revision 1, Notice of Deficiency (NOD) Comment Response Resolution Table are submitted by the U.S. Department of Energy, Richland Operations Office (RL), and the Westinghouse Hanford Company (WHC) for approval by the State of Washington Department of Ecology (Ecology).

The NOD comments have been resolved through a NOD resolution process with representatives from RL and Ecology. This closure plan addresses and proposes clean closure of the 216-B-3 Expansion Pond (216-B-3A, 216-B-3B, and 216-B-3C). Approval of this closure plan will support the fulfillment of Hanford Federal Facility Agreement and Consent Order Milestone M-17-10. This milestone requires that by June 1995, RL "cease liquid discharges to hazardous waste land disposal units unless such units have been clean closed in accordance with the Resource Conservation and Recovery Act."

Should you have any questions, please contact Ms. D. M. Wanek of RL on 376-5778 or Mr. F. A. Ruck III of WHC on 376-9876.

Sincerely,

James D. Bauer, Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

William T. Dixon, Manager
Environmental Services
Westinghouse Hanford Company

Enclosures and cc's: See page 2

Enclosures:
1. 216-B-3 Expansion Ponds
   Closure Plan, Revision 2
2. 216-B-3 NOD Comment Response
   Resolution Table, Revision 1

cc w/encls:
B. Burke, CTUIR
D. Duncan, EPA
M. Harmon, EM-442
R. Jim, YIN
T. Michelena, Ecology
R. Person, DOE-HQ
D. Powaukee, Nez Perce Tribe
F. Ruck III, WHC
J. Wallace, Ecology
EDMC, ~~H4-08~~ H6-08

cc w/o encls:
W. Dixon, WHC
S. Price, WHC

No.	Comments/Response	Concurrence
1.	**Comment:** iii, 1 and 40 Postclosure requirements are not addressed in the forward chapter of the closure plan. Postclosure requirements must be addressed to fulfill the requirements of WAC 173-303-650(6)(c). **DOE-RL/WHC Response:** No change to text, based on resolution of comments for chapter 8. The 216-B-3 Expansion Ponds are being clean closed with no waste left in place.	1. Concur September 29, 1994
2.	**Comment:** 1-1, section 1.1 This section focuses on the pre-existing 216-B-3 TSD unit prior to division of the pond system into two separate units. The expansion ponds are addressed as part of the original B Pond system with no differentiation between the individual TSD units. The closure plan must address the expansion ponds as an independent TSD unit. Modify the text accordingly to distinguish the two units and avoid confusion. **DOE-RL/WHC Response:** Accept. The following will be added to the Permitting History section: In December 1993, the unit-specific Part A permit application, Form 3, was revised to separated the three expansion ponds (the 3A, the 3B, and the 3C Ponds) from the remainder of the unit (the 216-B-3 Pond and the 216-B-3-3 Ditch). This modification was made to allow clean closure of the expansion ponds while integrating closure activities for the 216-B-3 Pond and 216-B-3-3 Ditch with RCRA corrective action for the 200-BP-11 Operable Unit. This current Part A, form 3, Revision 0 for the 216-B-3 Expansion Ponds is included with this closure plan.	2. Concur - August 4, 1994

No.	Comments/Response	Concurrence
3.	**Comment:** 1-2, 2-3 The plan states that revision 3 of the Part A is included in section 1.3. This is incorrect. The Part A, Form 3, is contained in a separate chapter of the closure plan. In addition, a new Form 3, revision 0, was generated for the Expansion Pond TSD unit and submitted to Ecology for approval December 16, 1993. Revise text accordingly. **DOE-RL/WHC Response:** Accept. The reference to Section 1.3 will be deleted.	3. Concur August 4, 1994
4.	**Comment:** 1-2, section 1.2 The closure strategy presented in this section addresses only the composition of the 200 BP-11 operable unit. This is inadequate and not appropriate. This unit is a RCRA TSD unit located within an operable unit, but this will have little or no impact on the closure of the TSD unit. The TSD unit will be closed in accordance with the Dangerous Waste Regulations (WAC 173-303). Modify the text to elaborate on the proposed closure of the Expansion Ponds. Also, provide an overview of closure performance standards. **DOE-RL/WHC Response:** Accept.	4. Concur - August 4, 1994
5.	**Comment:** 1-2, 28-30 Include a citation to the Model Toxics Control Act in addition to those provided.	5. Concur - August 4, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: This section describes how and why the Hanford Site was divided into operable units. MTCA supplies numerical clean-up standards for RCRA closures. A reference to MTCA will be added later in this section, when describing the sampling efforts and results.	
6.	**Comment:** 1-2, 36-38 The last sentence of the paragraph which addresses coordination of timing for investigation and remediation of the TSD and the associated operable unit is irrelevant to the closure of the Expansion Ponds. Delete the sentence.	6. Concur - August 4, 1994
	DOE-RL/WHC Response: Accept.	
7.	**Comment:** 1-2, 41 Provide text to address the other two waste management units. Explain the criteria for qualifying the ditches as past practice waste management units. Describe the extent and type of contamination expected to be contained in the 216-B-1 and -2 ditches, respectively.	7. Concur August 4, 1994
	DOE-RL/WHC Response 2: Text will be added to state that, as discussed in Section 2.2, the 216-B-3-1 and the 216-B-3-2 ditches were stabilized and taken out of service, prior to RCRA, in 1964 and 1970 respectively.	
8.	**Comment:** 1-3, 15 "Currently, the ... Part A <u>... is being</u> modified. Modify the text to reflect the current status of the Part A, Form 3 for the Expansion Ponds.	8. Concur August 4, 1994
	DOE-RL/WHC Response: Accept.	

No.	Comments/Response	Concurrence
9.	**Comment:** 1-3, 31 It is stated that the Part A is based on the chemical discharge history of the PUREX plant. It is inappropriate to base the disposal history and Part A on only one of the many facilities which discharged to the B Pond system. Therefore, if the Part A, Form 3 for the lobes should reflect any discharges, or potential discharges, from all facilities discharging to the expansions ponds from October 1983 to present. **DOE-RL/WHC Response:** As is stated in the following sentence "Other facilities that discharged to B Pond either did not have the potential to discharge dangerous waste or a record search did not reveal documentation of dangerous waste discharges." The reference to a record search in this sentence will be deleted. A general reference to record searches conducted is in revised section 4.0 The Part A, form 3 included with this closure plan does list other facilities which discharged to the expansion ponds. It is stated in the Part A form 3 that "waste water (primarily process and cooling water) from the PUREX Plant, the B Plant Complex, the 242-A Evaporator, and other 200 East Area units is received by the expansion ponds through the Main Pond." However, the dangerous waste received by the expansion ponds came from PUREX operations. Therefore, the Part A form 3 is based on information about these PUREX effluents. It will be noted that the other facilities that discharged to the B-Pond System didn't have potential to discharge dangerous waste during the time that the 216-B-3 Expansion Ponds operated.	9. Concur August 4, 1994

No.	Comments/Response	Concurrence
10.	**Comment:** 1-4, 34-36 The sentence refers to the state and federal Dangerous Waste Regulations. The Dangerous Waste Regulations are Washington state regulations. The Code of Federal Regulations are federally mandated regulations. **DOE-RL/WHC Response:** Accept. Text changed to "to determine if the discharges were designated as a dangerous or extremely hazardous waste in accordance with the state and federal regulations."	10. Concur August 4, 1994
11.	**Comment:** 1-5, 32 Several extremely hazardous wastes (EHW) were released to the unit. Briefly addresses if any EHW constituents were detected from sampling events conducted at the unit. **DOE-RL/WHC Response:** Accept. Text added to state that the sampling and analyses effort conducted at the 216-B-3 Expansion Ponds did not indicate that any of these constituents were in the surface soil or vadose zone in concentrations above action levels. The sampling and analyses efforts and action levels are described in Chapter 7.0.	11. Concur August 4,1994
12.	**Comment:** 2-1, 52 The date should be 1994, not 1995, as stated. **DOE-RL/WHC Response:** Accepted and Incorporated.	12. Concur August 4, 1994

No.	Comments/Response	Concurrence
13.	**Comment:** 2-3, 31-36 Specify when spillways were constructed. Note: It is difficult to determine the location of spillways discussed in text from the figures provided in this chapter. In addition to those figures presented in chapter 2, provide a sketch of the entire pond system identifying the location of each spillway or interconnection between ponds. Indicate which spillways are functioning and those that are not. **DOE-RL/WHC Response:** The 216-B-351 Spillway way constructed at the same time as the 3A Expansion pond. The text states that the 216-B-351 Spillway connects the Main Pond and 3A Pond. Since the Main Pond has been stabilized this spillway is no longer in use. The reader will be referred to figure in Part A (on page 6 of Part A section).	13. Concur August 4, 1994
14.	**Comment:** 2-3, 49 Specify how materials generated from the modification of the spillway 216-B-351 were managed. **DOE-RL/WHC Response:** In general, material generated was used, as needed, to build up the dike around the main pond. This information will be added to the text.	14. Concur August 4, 1994
15.	**Comment:** 2-4, 24-26 Discuss the disposition and management of soil excavated from the 3A Pond bottom. **DOE-RL/WHC Response:** The material generated during the construction of the infiltration trench in the 3A Pond was used to reinforce dikes surrounding the Main Pond. Information added to text.	15. Concur August 4, 1994

No.	Comments/Response	Concurrence
16.	**Comment:** 2-6, 5-7 Specify areas disturbed, and indicate the location(s) on a map of the B pond System. **DOE-RL/WHC Response:** The paragraph will be deleted and replaced with information that states that after installing the pipeline from the 3A Pond to the 3C Pond, the area was backfilled and revegetated.	16. Concur August 4, 1994
17.	**Comment:** 2-6, 10 Besides monitoring dike integrity, specify if other drivers for installing the piezometers (i.e., regulatory, TPA, etc.). Provide an areal diagram indicating the location of the piezometers indicating which are still functional, if any. Clarify if functioning piezometers are still utilized to monitor saturated flow. If so, how is this information evaluated and utilized, and where is it compiled.	17. Concur August 4, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Currently the Main Pond and the 3A Lobe are being drained and will not be used in the future. Therefore piezometers are no longer in use. They will be plugged and abandoned following the procedures found in WHC-CM-7-7, EII 6.5, "Plugging and Abandoning of Characterization Boreholes". Since they are no longer in use there is no reason to show locations of functioning piezometers. The text has been modified to reflect the change in status of the piezometers. In addition, the following information will be added to the introductory paragraph in this section: The system of piezometers was installed to monitor for the presence of any saturation that might endanger the dikes structural integrity. The piezometers provided immediate information on the structural integrity of the dikes which contained the B-3 Main Pond and the 3A Pond. These piezometers were not part of the groundwater monitoring system. (The groundwater monitoring system is discussed in Chapter 5.0.) Monitoring of the piezometers was discontinued in early 1994 as the 3A Pond was taken out of service.	
18.	**Comment:** 2-6, 39-49 This paragraph is convoluted and full of contradictions. Explain why a drop in water level is not considered probable. Other groundwater monitoring systems should be able to confirm or refute the current piezometer readings. Confirm whether the groundwater level has decreased or not.	18.Concur September 29, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Water levels have dropped since installation of the piezometer wells. Since the Main Pond is being stabilized there is no concern to monitor the groundwater in regards to saturation. Finally, as mentioned in NOD#17, piezometers are being abandoned. Also, groundwater elevation will continue to be monitored as part of the Operable Unit remediation. This will be noted in the text.	
19.	**Comment:** 2-6, 41 A decrease in the infiltration rate of expansion pond 3A is presented as the reason for the decrease in the water table. This is not consistent with page 2-4, 24-29, which would indicate an increase in the infiltration rate due to the excavation of the trench beneath the 3A Pond.. The first sentence states the flow to the pond system was reduced. This would appear to be a more likely reason for the watertable decline. Modify text to clarify the current status of the groundwater dynamics associated with the unit. **DOE-RL/WHC Response:** Sentence deleted. First paragraph of revised section 2.2.3 (Dike Piezometers) has been expanded to include information on the use of the peizometers. The peizometers were installed in response to the dike failure that occurred between the 3A and 3B Ponds. The piezometers provided immediate information ont eh structural integrity of the dikes. These Piezometers were not part of the groundwater monitoring system. The reader will be referred to Chapter 5 for information on the groundwater monitoring system.	19. Concur September 29, 1994

No.	Comments/Response	Concurrence
20.	**Comment:** 2-6, 46 Integrity testing of the piezometers was conducted in 1986. State if there was any effort to correlate piezometer readings data with surrounding groundwater monitoring data. **DOE-RL/WHC Response:** No such study has been done to relate piezometer readings and groundwater monitoring data. The term "integrity testing" will be changed to "functional testing".	20. Concur August 4, 1994
21.	**Comment:** 2-7, 26 Clearly define project X-009. **DOE-RL/WHC Response:** Text has been modified. The X-009 Project put in a pipeline from the diversion box at the 3A Stilling Basin to a new diversion box north of the 3B Pond. A new pipeline was added from this new diversion box that allows flow to either 3B or 3C Ponds or both simultaneously. At this time all flow goes directly to 3C bypassing 3B. A pipeline equipped with control gates has been installed from the 3B Ponds to the 3C Pond to provide the added capability to drain flow from the 3B Pond into the 3C Pond should it become necessary to use the 3B Pond.	21. Concur August 4, 1994
22.	**Comment:** 2-7, 33 The security information section of the closure plan does not address the lack of a 24-hour surveillance system or an artificial or natural barrier which completely surrounds the unit as required by WAC.173-303. Access of wildlife to the unit and the ingestion of pond water are not addressed. Modify text accordingly.	22. Concur September 29, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Text has been modified. Please see revised section 2.3. Also this section states that the appropriate fence (single strand chain) is in place surrounding the entire unit. Results of the three sampling efforts indicate that the soils, sediments, and vadose zone are clean with respect to RCRA. In addition, water sampling was performed as part of the Phase 2 sampling effort. No dangerous waste constituents were found. The main pond and the 3A pond are being dried and stabilized. There is no reason to expect any adverse affect on persons or livestock seen near the area. The following text is not added: In addition, access of wildlife into the pond area was discussed during the NOD cycle of the original B-Pond System closure plan. Discussion at that point centered on risk assessment information (particularly the EPA report on *Remedial Investigation Report, Silver Mountain Mine, Okanogan County, Washington, EPA, January 1990.* That information satisfied Ecology at the time and the comment was considered closed by a letter received from Ecology dated March 18, 1993.	
23.	**Comment:** 2-7, 35 The text states that "[a]n effective security program is maintained..." Such a statement is not justified by the argument provided. Explain why the system is not in full compliance with the Dangerous Waste Regulations, WAC 173-303. **DOE-RL/WHC Response:** Text has been modified. Please see revised section 2.3, it describes the 24 hr. surveillance plan.	23. Concur August 4, 1994

No.	Comments/Response	Concurrence
24.	**Comment:** 2-8, 1-3 The text states that appropriate radiological warning signs are present. First, the required hazardous/dangerous waste unit warning signs required by WAC 173-303 are not addressed, and second, this implies that radioactive contamination exists at the unit. Revise text to address both issues. **DOE-RL/WHC Response:** Text changed to indicate current status. See response to comment 22. Copies of correspondence between RL and Ecology from May and June of 1989 on the issue of B-Pond Security (requirement for signs) was provided to the Ecology Unit Manager. (These letters are in the Administrative Record as letter numbers: 8902267 and 8902005B.)	24. Concur September 29, 1994
25.	**Comment:** F2-19 This figure is difficult to interpret. Provide a figure which identifies the location of all existing and preexisting piezometers in relation to the entire pond system. **DOE-RL/WHC Response:** Figure is to be replaced. See revised figure F2-12.	25. Concur September 29, 1994
26.	**Comment:** T2-1, Table 2-1 Provide another column in the table which indicates the depth to the watertable as indicated by the groundwater monitoring systems in the area. Provide reference to source and date of information.	26.

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The purpose of piezometers was to monitor the dike integrity. They were not related to the groundwater monitoring system. However, the table will be revised. Depth to water table data doesn't correlate with ground water monitoring; the last column will be deleted. Also, the table will be revised with information from the original report (from Rockwell Hanford Operations, SD-WM-PRS-006, 1987). The third column should have been labelled "Depth from Ground Surface (ft)" not Depth from Top to Bottom. The top of the pipe is often higher than the ground surface.	
27.	**Comment:** 3-1, 13 The statement "[o]ther waste streams may be discharged to the 216-B-3 Pond System in the future" is presumptive and is not applicable to the closure of the expansion ponds. Remove statement from the document. **DOE-RL/WHC Response:** Accept. Sentence deleted.	27. Concur August 4, 1994
28.	**Comment:** 3-1, 22 See comment regarding Figure 3-1. **DOE-RL/WHC Response:** There is no comment regarding Figure 3-1. (It was explained that this comment refers to updating the figure and adding a legend/date.) Figure 3-1 will be revised and updated.	28. Concur August 4, 1994

No.	Comments/Response	Concurrence
29.	**Comment:** 3-1, 30 Specify the current destination of cooling water used in heating and cooling operations. **DOE-RL/WHC Response:** The Expansion Ponds as specified in the paragraph.	29. Concur August 10, 1994
30.	**Comment:** 3-1, 32 Indicate on a pipe diagram all radiation monitors used to divert unintentional release of radionuclides to the pond system. *Address cumulative affects of releasing "de minimis" amounts of radioactive material to the pond system. Elaborate on the basis for the "predetermined radiation level" (i.e., risk, DOE Orders, etc.). Define "basin" and describe the specific basin being addressed. DOE-RL/WHC Response: Figure 3-1 will be revised to include current monitors. Information is also provided in chapter 4 in response to comment 56. The reader will be referred to section that information will be added to.	30. Concur August 10, 1994
31.	**Comment:** 3-1, 46-48 Elaborate on differences in the effluent streams discharged to the B Pond System from PUREX before, during, and after upgrading the facility.	31. Concur September 29, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: There is no difference. Before, during, and after upgrading the facility PUREX discharged cooling water and the chemical sewer to the 216-B-3 Pond System. Add to text: These upgrades did not effect the liquid effluents.	
32.	**Comment:** 3-2, 5 The opening paragraph of this section leads one to believe that the PUREX chemical sewer no longer discharges to the B Pond System, but later text states that "discharge ... comes from the chemical sewer." Modify text to specify if the PUREX chemical sewer still discharges to the B Pond System. In addition, address the composition of continued discharges. **DOE-RL/WHC Response:** Accept. This sentence will be changed to state that discharges are currently occurring. The preceding paragraph discusses the operational status of the PUREX plant, stating that it is currently in standby mode. Once transition to shutdown mode is complete, no liquid effluent streams will be produced. PUREX is currently in transition to shutdown mode, but this transition is not complete. It will be noted that as of 1990, both the PUREX chemical sewer line and the cooling water have been designated as not dangerous waste streams per the Hanford Site Stream-Specific Report, WHC-EP-0342 Addendums 2 and 20 (WHC 1990).	32.Concur September 29, 1994
33.	**Comment:** 3-2, 8-10 Define "past." Discuss the 216-A-42 diversion basin. Specify if it is a radiation detector, diverter, or both. Describe maintenance, calibration, and tracking of data produced by the diverter.	33. Concur August 10, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Accept. In the past will be defined as from 1956 until transition to standby mode. It will be noted that transition to standby mode occurred in 1992. It will be noted that this is a radiation diversion basin.	
34.	**Comment:** 3-2, 10-14 Provide a description of a crib, theoretical operation, and streams typically discharged to such units. Elaborate on the criteria to release specific volumes of waste to specific cribs.	34. Concur August 10, 1994
	DOE-RL/WHC Response: Information will be added to state that cribs are subsurface waste management units for highly radioactively contaminated streams. The reader will be referred to a figure (revised Figure 3-2) outlining flow to the cribs and noting that the cribs were taken out of service in September 1991.	
35.	**Comment:** 3-2, 16-18 Quantitatively and qualitatively define "high" in regard radionuclide content and the source of the definition. Provide date(s) in which monitoring for radiation and pH was initiated.	35. Concur September 29, 1994
	DOE-RL/WHC Response: Accept. All streams which could flow to the pond had monitoring and diversion capabilities in place by 1984 when the expansion ponds started operation. The administrative controls were in effect before the construction of the Expansion Ponds. The alarm set points are also low enough for PUREX to divert the stream to the 216-A-42 Diversion Basin if necessary. Nominally, this alarm point is 4,580 counts per minute.	

No.	Comments/Response	Concurrence
36.	**Comment:** 3-2, 18 Address the potential for release due to reaction time required for manual diversion of corrosive chemical discharges. Specify if discharges occurred, and if so, describe reporting, tracking, and response procedures. **DOE-RL/WHC Response:** Accept. The potential for release based on reaction time is considerably low. Upon instrument monitoring detection of an abnormal condition, an audible alarm sounds in the PUREX Plant central control room and dispatch office (which is staffed 24 hours a day). The alarm set points are set at pH 5 and 11 to allow for operator response time. When the alarm is received in the PUREX Plant central control room and dispatch office, it alerts the process operators to an abnormal condition that may require a diversion of the chemical sewer discharge to the 216-A-42 Diversion Basin. It will also be noted that response time is almost immediate because the control room is located in proximity to the dispatch office.	36. Concur September 29, 1994
37.	**Comment:** 3-2, 35-37 The criteria for determining which materials were within "proper specifications for disposal to the environment" must be incorporated into the closure plan. The analysis described in line 44, page 3-2 is inadequate to determine if a material designates as a dangerous waste per the Dangerous Waste Regulations, WAC 173-303. **DOE-RL/WHC Response:** Accept. Process knowledge and extensive sampling of the Chemical Sewer Line in accordance with WAC 173-303-090 Dangerous Waste Criteria, form the basis for the proper specifications.	37. Concur September 29, 1994

No.	Comments/Response	Concurrence
38.	**Comment:** 3-3, 1-41 Again, it is unclear if the discussion initiated at this point occurred in the past or is on-going. The opening paragraph to this section leads one to believe these activities are no longer occurring. Modify text to clarify if the PUREX chemical sewer currently discharges to the B Pond System. **DOE-RL/WHC Response:** Accept. Text will be changed to: The chemical sewer stream was the most probable source for discharge of a dangerous material to the 216-B-3 Expansion Ponds. Numerous administrative controls and engineered barriers were implemented to prevent dangerous waste from being disposed of to the chemical sewer and these controls and barriers are still in use today.	38. Concur September 29, 1994
39.	**Comment:** 3-3, 26 Specify what containment dikes contained or surrounded. **DOE-RL/WHC Response:** To date, most of the dangerous materials once used or stored for the PUREX process have been removed from the facility. Therefore, the potential for discharge of any dangerous material is very low. Text will be added to the bullet to state: The containment dikes were installed around tanks that had a potential to release a dangerous material to the chemical sewer either by spill or overflow.	39. Concur September 29, 1994
40.	**Comment:** 3-3. 34. Describe the B-669 elementary neutralization system.	40. Concur August 10, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Accept. Added to text: B-669 elementary neutralization system (now shut down) is a process for the collection and neutralization of miscellaneous floor solutions from the chemical storage pump house before the solutions are discharged to the chemical sewer. As necessary, sulfuric acid or sodium hydroxide is metered in to adjust the pH of the solution. When the solution reaches material specifications (pH 2 to 12), it is routed to the chemical sewer.	
41.	**Comment:** 3-3. 43-46 It is stated the "[a] pH meter monitors ... for radiation and corrosion." Modify text to correct error.	41. Concur August 10, 1994
	DOE-RL/WHC Response: Accept. The reference to the pH meter monitoring radiation will be deleted.	
42.	**Comment:** 3-5, 16 Specify the scope, date, and duration of upgrades.	42. Concur August 10, 1994
	DOE-RL/WHC Response: DOE-RL/WHC Response 2: Accept. Text will be added: From 1986 through 1988 several upgrades were installed to preclude chemicals from entering the chemical sewer line. The remaining text in the section describes the upgrades.	
43.	**Comment:** 3-5, 25-31 Provide a discussion of how wastes were removed and managed from tanks in the canyon. Provide a diagram indicating the location of the tanks and piping within the facility. Describe the diversion mechanism(s).	43. Concur August 10, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Text will be added to state that waste water from the tanks would go to tank farms or be reprocessed within the facility until acceptable for discharge.	
44.	**Comment:** 3-7, 30-32 Specify the time frame in which B Pond may have received out-of-specification chemicals from PUREX.	44. Concur August 10, 1994
	DOE-RL/WHC Response: Already reported in the 216-B-3 Expansion Ponds closure plan. Reader will be referred to Section 4.1.1 and to Table 4-3.	
45.	**Comment:** 3-7, 40-41 Specify date when probes were installed in the tanks.	45. Concur August 10, 1994
	DOE-RL/WHC Response: Added to text: Installation of liquid-level capacitance probes was complete by the fall of 1987.	
46.	**Comment:** 3-7, 40-50 to 3-8, 1-5 It appears that the text provided here is verbatim to that which is provided in an earlier section 3-5, 33. If the text is correct, provide a statement referring back to the earlier section to highlight similarities, or correct, if in error.	46. Concur October 10, 1994
	DOE-RL/WHC Response: Text changed to: The same action, as for the pipe and operating gallery tanks, was taken to prevent overfilling the make-up tanks. Installation of the liquid-level capacitance probes inside the tanks was completed by the fall of 1987. The three alarm functions are as described in section 3.1.1.4.	

No.	Comments/Response	Concurrence
47.	**Comment:** 3-8, 7-29 Describe how surveillance of makeup tanks and catch tanks performed. Indicate if a backup system existed. **DOE-RL/WHC Response:** Accept. As is described in the first two paragraphs of this section: aqueous makeup-area catch tanks and liquid-level instrumentation systems have been installed that cut off flow to makeup tanks when the liquid levels approach overflow. Also, text will be added to stated that the catch tanks in the aqueous makeup area are monitored by a visual inspection and manual recording every 8 hours and have high-level instrumentation associated with them.	47. Concur August 10, 1994
48.	**Comment:** 3-8, 33 Define "appropriate level." **DOE-RL/WHC Response:** Accept. Text will be changed to stated 50 to 70 percent of tank capacity.	48. Concur October 10, 1994
49.	**Comment:** 3-8, 37 Specify date in which route was isolated. **DOE-RL/WHC Response:** Engineering documentation cannot be found, however a walkdown of the route identified the isolation. DOE-RL/WHC Response additional: Employees were interviewed and indicated that this line was never used and that it contains the original blank installed during construction of the line.	49. Concur October 10, 1994
50.	**Comment:** 3-8, 48-50 Specify analysis conducted to determine if collected material would be disposed of, or used.	50. Concur August 10, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Accept. Text will be added: Analysis included: pH, total alpha, total beta, total organic carbon, and other constituents if suspected.	
51.	**Comment:** 3-9, 13-17 Specify sampling and analysis conducted.	51. Concur August 10, 1994
	DOE-RL/WHC Response: pH. No change to text.	
52.	**Comment:** 3-9, 24-26 Specify corrosives discharged, and estimated concentrations at the point of discharge (i.e., when it exited the boundary of the building).	52. Concur August 10, 1994
	DOE-RL/WHC Response: Accept. Text will be added to state that the corrosive waste consisted of sulfuric acid (97 weight percent) and/or sodium hydroxide (50 weight percent).	
53.	**Comment:** 3-10, 15-21 Explain why steam would exist in a cooling water line.	53. Concur October 6, 1994
	DOE-RL/WHC Response: Accept. The cooling water line was designed to accept either cooling water or steam depending on whether a piece of equipment needed heating up or cooling down. Many vessels may require both heating and cooling at different times. These vessels have only a single set of heating/cooling coils that discharge to a specific stream.	

No.	Comments/Response	Concurrence
54.	**Comment:** 4-1, 6-8 The statement "[c]ontrols have been implemented since 1984 to eliminate any potential to discharge dangerous waste to the 216-B-3 Ponds System" is misleading. Potentially contaminated waste water is currently being released to the pond system. **DOE-RL/WHC Response:** Accept. Sentence changed to state: Administrative controls and engineered barriers have been implemented to prevent and/or mitigate ...	54. Concur October 6, 1994
55.	**Comment:** 4-1, 16-17 The statement "[o]ther waste streams may be discharged to the 216-B-3 Pond System in the future" is presumptuous and leaves room for broad interpretation and confusion. It may be interpreted that regulated dangerous or radioactive waste will continue to be discharged to the system. It also assumes that a Waste Water Discharge Permit will be issued to allow discharge to this unit. Delete sentence. It is not necessary or applicable to the closure. **DOE-RL/WHC Response:** Accept.	55. Concur August 10, 1994
56.	**Comment:** 4-1, 45-51 Explain how waste streams were monitored. Provide a summary of the information gathered during monitoring and where it is compiled.	56.

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: Review of the WHC-EP-0342 provided the following info:

Text will be added:
The radiation monitors used are:

- PUREX
  - Chemical Sewer: Gamma monitor (diverts to A-42 Basins if count rate exceeds 4,580 counts per minute).
  - Steam Condensate: Alpha monitor (alarms at 41 counts per 1000 seconds). Gamma monitor (alarms at 62,500 counts per minute).
  - Cooling Water: Alpha monitor (alarms at 41 counts per 1,000 seconds); Gamma monitor (alarms at 30,000 counts per minute).
- B Plant
  - Chemical Sewer: Beta monitor (sensitive to 2×10^{-7} uCi/mL ^{90}Sr); Gamma monitor (sensitive to 1×10^{-6} uCi/mL ^{137}Cs).
  - Cooling Water: Beta monitor (alarms at 5×10^{-5} uCi/mL ^{90}Sr; Gamma monitor (alarms at 3×10^{-3} uCi/mL ^{137}Cs).
- 241-A Tank Farm Cooling Water: Grab samples monitored for gamma and beta per WHC-CM-7-5 manual.
- 242-A Cooling Water: Beta-gamma monitor (alarms at 7.5 counts per second above background)

The following information will be added to the preceding paragraph:
Streams from the 283-E Waste Treatment Facility, the 284-E Powerhouse and the 244-AR do not have online monitors, because the facilities do not process radioactive materials.

Monitors are indicated on Figure 3-1.

No.	Comments/Response	Concurrence
57.	**Comment:** 4-1, 49-51 Provide a description of the radiation detectors employed, the sensitivity, and the types of radiation measured. **DOE-RL/WHC Response:** See comment 56.	57. Concur August 10, 1994
58.	**Comment:** 4-2, 26-29 The text states that samples are composited over a month and then analyzed. This contradicts a previous section in the closure plan that composite liquid samples were collected weekly. Correct or clarify inaccuracy. Specify method of composite sampling, analysis, and analytical parameters. **DOE-RL/WHC Response:** Text will be revised to state: The individual liquid-waste stream estimates are derived from samples of liquid effluents collected weekly over a month's time, and then composited and analyzed for gross alpha and gross beta radioactivity, as well as for radioactive parameters.	58. Concur October 6, 1994
59.	**Comment:** 4-2, 50-51 Provide a copy of the application for certification of proposed designation and a discussion of the final disposition of the application for streams which were/are discharged to B Pond. Specify the duration of discharges to each individual pond.	59. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The Expansion Ponds are not a generator of wastes. Also these application would be handled by the unit that generated the waste (e.g. PUREX, B Plant, etc.) Furthermore, the Dangerous Waste Application in the Part A for the Expansion Ponds would list all of the waste associated with the Ponds. Text will be changed to state that the Waste Stream Characterization Report study was undertaken to characterize waste streams discharging to the soil column (including those discharging to the B-Pond System) and that the streams discharging to the B-Pond System are non-dangerous. The application for certification of proposed designation has been superseded by the Washington State Waste Discharge Permit program, WAC-173-216 application. The sentence referring to the application for proposed designation will, therefore, be deleted from the text. Chapter 6 discusses the WAC-173-216 Permit.	
60.	**Comment:** 4-3, 3-6 It is not clear if the WHC-EP-0367 report proposed that current, or past streams be classified as nondangerous. Provide the criteria for establishing the nondangerous designation. Modify text accordingly. **DOE-RL/WHC Response:** Current streams were classified nondangerous. The word "currently" will be inserted. The basis for designation was a combination of process knowledge and sampling data.	60. Concur October 6, 1994
61.	**Comment:** 4-3, 24-25 Clarify if Table 4-2 includes chemicals which may have only been used in a one time campaign.	61. Concur August 10, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: It includes all chemicals. Some of these chemicals were used very infrequently but none were used uniquely in a one time campaign.	
62.	**Comment:** 4-3, 41-44 This paragraph contradicts itself. How could a discharge have occurred in 1987 if administrative and physical controls eliminated dangerous waste discharges in 1984? See comment addressing 4-1, 6-8. Modify text to correct inconsistency. **DOE-RL/WHC Response:** Administrative and physical controls did not eliminate dangerous waste discharges but were installed to prevent and/or mitigate discharges of dangerous waste. These controls were implemented starting in 1984; not all controls were in place by 1987. Text will be changed as follows: Administrative controls and engineered barriers have been implemented to prevent and/or mitigate dangerous waste discharges to the 216-B-3 Expansion Ponds form the PUREX Plant chemical sewer. the last known reportable chemical discharge occurred in April 1987.	62. Concur August 17, 1994
63.	**Comment:** 4-4, 13 Contradicts 4-3, '41 which states "administrative and physical controls eliminated dangerous waste discharges in 1984." Correct inconsistency. **DOE-RL/WHC Response:** Accept. Note change incorporated as response to comment 62.	63. concur October 6, 1994

No.	Comments/Response	Concurrence
64.	**Comment:** 4-4, 14-20 A pH of 2.30 would be considered more than slightly acidic and would barely avoid being regulated as a dangerous waste. It is the generators' responsibility to properly designate and manage theft waste from generation to disposal. Such close calls based only on theoretical knowledge would be considered haphazard, especially since it is not apparent how such a dilute acid solution would generate such a low pH. Elaborate on calculations and assumptions which designations were based. Specify if a pH meter(s) was used, and if so, the error tolerance of the meter(s). If a pH meter(s) was used explain how it was standardized. **DOE-RL/WHC Response:** The word "slightly" will be removed from the text. This is based on calculated values. In November 1985, a pH meter was installed to monitor pH directly. The molarity and pH of the acid fractionator condensate was determined based on process knowledge and equipment design and capabilities. The calculations are based on a PUREX processing rate of 10 MTU/day. The acid fractionator with a flowrate of 60.9 L/min. of 3.34 molar nitric acid feed solution produced a 10.4 molar (50 wt% nitric acid) acid with a flowrate of 25.0 L/min routed to the Backcycle Waste System. The acid fractionator concentrated the nitric acid feed. The concentrated acid was sent out the bottom of the tower and the water with a molarity of 0.005 (pH 2.3) was discharged out the top. Also, nitric acid (HNO_3) is a strong acid and can be assumed to be completely ionized in a water solution. Since, $pH = -\log[H^+]$, the calculated $pH = -\log[0.005]$ or $pH = 2.3$. A solution of double this concentration would have $pH = -\log[.01]$, which is a pH of 2.	64. Concur August 17, 1994

No.	Comments/Response	Concurrence
65.	**Comment:** 4-4, 35-49 Contradicts 4-3, 41 which states 'administrative and physical controls eliminated dangerous waste discharges in 1984." Correct inconsistency. **DOE-RL/WHC Response:** Accept. See change incorporated as response to comment 62.	65. Concur October 6, 1994
66.	**Comment:** 4-5, 24-27 Define "at the point the chemical sewer line enters the environment" (i.e., when lines exit building or release to open ditches, etc.). The term as used in the text does not appear to be consistent with WAC 173-303-040 definition of environment. It is not appropriate to designate waste in such a manner. Wastes must be designated in accordance with WAC 173-303-070 as generated. **DOE-RL/WHC Response:** Accept. Text changed to "until 1991 discharge to the 216-A-29 Ditch; until February 1994 discharge to the 216-B-3-3 Ditch; and currently at the end of the pipe where the chemical sewer reaches the 216-B-3 Expansion Ponds.	66. Concur August 17, 1994
67.	**Comment:** 4-5, 35-37 The second sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past, such cites to lack of documentation is inappropriate, misleading, and will not be allowed to support the proposed closure.	67. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Text added to introductory section (Section 4.0) to state the record searches were performed at each of the facilities discharging to the 216-B-3 Expansion Ponds for documentation of any past dangerous waste discharges. Later references to record searches will be deleted.	
68.	**Comment:** 4-5, 44-48 Clarify if radioactive wastes were, or were not, released to the B Pond system following diversion to the 216A-42 Diversion basin. Explain how the final destination of effluent was decided among the alternative disposal sites.	68. Concur October 6, 1994
	DOE-RL/WHC Response: Radioactive waste were discharged to the B-Pond System following diversion to the 216-A-42 Diversion Basin if the waste met the criteria for discharge to the Pond System. If an incident occurred that resulted in diversion to the basin, and the steam condensate discharge was sampled for radionuclide content and normally discharged to its original destination. If the waste met the criteria "administrative control values documented in operations manuals" for discharge to the B-Pond System, it was occasionally discharged to the pond system. If the radionuclide content was too high for disposal to the soil column, the waste was sent back to the PUREX Plant for reprocessing.	
69.	**Comment:** 4-6, 3-5 The second sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past, such cites to lack of documentation is inappropriate, misleading,and will not be allowed to support the proposed closure.	69. Concur October 6, 1994
	DOE-RL/WHC Response: See comment 67.	

No.	Comments/Response	Concurrence
70.	**Comment:** 4-6, 37-40 Provide justification for the assumption that 1969 was a typical year operating, and therefore, would provide a valid estimate of discharges from B Plant. **DOE-RL/WHC Response:** This section is not pertinent to the Expansion Ponds and has been rewritten to eliminate this annual estimate information.	70. Concur October 6, 1994
71.	**Comment:** 4-7, 31-34 Describe the expected products of the precipitation reaction of trisodium phosphate, calcium chloride, strontium and any other waste already released to the pond system. Discuss the physical and chemical characteristics of such products such as mobility, solubility, etc. **DOE-RL/WHC Response:** Discussion eliminated from the text. This is prior to the Expansion Ponds operation.	71. Concur October 6, 1994
72.	**Comment:** 4-7, 41-51 Elaborate on the purpose and function of the pump pits, sumps, 211-B storage tank area, and tank storage basins. Describe types and purpose of materials stored in these tanks. **DOE-RL/WHC Response:** Discussion eliminated from text. Prior to 1992, the B Plant chemical sewer received runoff from these. However, during that time the B Plant chemical sewer did not discharge to the Expansion Ponds. The B Plant chemical sewer was directed to the Expansion Ponds in February 1992.	72. Concur October 6, 1994
73.	**Comment:** 4-8, 22-24 The second portion of this sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past such cites to lack of documentation is inappropriate, misleading and will not be allowed to support the proposed closure.	73. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: See comments 67.	
74.	**Comment:** 4-8, 38-40 This sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past such cites to lack of documentation is inappropriate, misleading and will not be allowed to support the proposed closure.	74. Concur October 6, 1994
	DOE-RL/WHC Response: See comment number 67.	
75.	**Comment:** 4-9, 12-16 Explain why the trade name chemicals are astricted here. It appears as if they were intended to be footnoted, but were not. Specify the percentage of sodium hydroxide and EDTA in DEARTROL, the percentage of sodium sulfite in DEARBORN, and other chemical constituents found in these products.	75. Concur October 6, 1994
	DOE-RL/WHC Response: Accept. They will be footnoted as trademarks of WR Grace & Co. Deartrol 4812 is <5% sodium hydroxide (45%) and < 25% EDTA. Dearborn 66 is >99% sodium sulfate. These values will not be added to the text as the amount of Deartrol and Dearborn used is not noted.	
76.	**Comment:** 4-9, 22 and 29 The document WHC-EP-0342 is not included in the closure plan, or referenced in chapter 9. Incorporate applicable sections of appropriate date into the closure plan and/or the administrative record.	76. Concur October 6, 1994
	DOE-RL/WHC Response: Reference to document in chapter 4 has been changed. Reference will be added to Chapter 9.0.	

No.	Comments/Response	Concurrence
77.	**Comment:** T4-2 Clarify why trade names are astricted. It appears as if they were intended to be footnoted, but were not. **DOE-RL/WHC Response:** Accept. The asterisks will be deleted.	77. Concur October 6, 1994
NOTE:	The original chapter 5 "Groundwater Monitoring" was complete revised and comments were received on the revised version. These comments are found at the end of this table, beginning with comment number 256. Comments from the original chapter 5 have been deleted from this NOD response table.	
129a.	**Comment:** 6-1, 19-22 The text states that clean closure is contingent upon verification that constituents remaining in the vadose zone and originating from disposal of dangerous waste in the ponds are not present in concentrations that represent a threat to human health or the environment. This statement is not consistent with regulatory language. Modify text to reflect compliance with the closure performance standards which requires demonstration that dangerous waste, dangerous constituents, dangerous waste decomposition products ... do not exceed closure requirements specified in WAC 173-303-610(2)(b).	129a. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The text will be changed reflect WAC-173-303-610(2)(a)(ii) and will state: "... has been verified that dangerous waste, dangerous waste constituents, dangerous constituents, leachate, contaminated run-off, or dangerous waste decomposition products remaining in the vadose zone that originated from disposal of dangerous waste to the expansion ponds are controlled, minimized, or eliminated to the extent necessary to protect human health and the environment." Closure requirements are as specified in WAC-173-303-610(2)(b).	
129b.	**Comment:** 6-1, 31-34 Due to the limited scope of previous sampling event, selecting analytes of concern from analytical data generated from that event is inappropriate. Because of the number of streams and facilities which discharged to the unit, analytes of concern should not have been limited to dangerous waste known to have been disposed of at the unit. This may lead to resampling under corrective action. Specify statistical approach utilized to determine significance.	129b. Concur October 6, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: No change to text.

All three sampling events did look at Appendix IX. Individual and composite samples from the Phase 1 Sampling event were analyzed for the total range of constituents found in Appendix IX. Individual samples focused on inorganic constituents; the composite samples completed the analyte requirements of Appendix IX. Subsequent sampling events took the results of the first sampling event into consideration in determining the analyte list. Phase 2 sampling did not include chlorinated herbicides and dioxins/furans. Also, the regulations in effect at the time of sampling did specify "any dangerous waste, managed at the facility...". Based on process knowledge and previous sampling events decisions were made with the Ecology Unit Manager regarding analytes for subsequent sampling events.

While the specific wording did change when the dangerous waste regulations were amended in December 1993, it is implied that dangerous waste refer to waste managed at the facility. This is stated in the Washington State Register, issue 93-12 in the section titled: Explanation of Rule, Its Purpose and Anticipated Effects, as "The demonstration of clean closure must consider all dangerous constituent generated or managed at the facility. If waste streams are unknown or suspect, then analysis of the constituent list in Appendix IX of 40 CFR 264 may be appropriate."

Additional Comment: Elaborate on statistical approach.

DOE-RL/WHC Response: DOE and the Ecology Unit Managers agreed on authoritative sampling rather than a statistical approach. The sample location were authoritative and the number of samples was based on agreements with the Ecology Unit Manager in place at the time of the sampling event.

No.	Comments/Response	Concurrence
130.	**Comment:** 6-1, 36 Action levels are to be based on the closure performance standards specified in WAC 173-303-610(2)(b). Health based limits are not addressed in the current (or prior) closure performance standards. Currently WAC 173-303-610(2)(b)(i) states "[f]or soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according the Model Toxics Control Act Regulations,....." Delete the term "health-based." Modify text to reflect regulatory language and requirements. Note: Due to the revision of the Dangerous Waste regulations in December 1993, it is advisable to elaborate on the basis for utilizing background as a closure standard at this unit. **DOE-RL/WHC Response:** The term "health-based" will be defined as "levels protective of human health and the environment as described in WAC 173-303-610(2)(a)(ii)". All analytical results were evaluated with respect to background levels as per MTCA. Phase 2 sampling, which was used to confirm the results of Phase 1 sampling, was evaluated using MTCA method B levels for closure performance standards. This will be specified in the text of this chapter. Added to text: Current RCRA closure performance standards, WAC 173-303-610(2)(b)(i), refer to the numerical cleanup levels calculated using the Model Toxics Control Act Regulations, WAC chapters 173-340-700 through 173-340-760 (excluding 173-340-745). WAC-173-340-700(4)(d) allows the use of natural background as a cleanup level.	130. Concur October 6, 1994

No.	Comments/Response	Concurrence
131.	**Comment:** 6-1, 45-49 The text fails to address sampling and analysis of "structures," (which are not described) therefore, it is assumed that sampling and analysis was not conducted. This management scenario for structures is not consistent with the Dangerous Waste Regulations, WAC 173-303-650(a)(i), which requires material to be managed as dangerous waste unless lack of contamination is verified. Briefly describe structures (i.e., spillways) and state if they were subject to sampling and analysis. If sampling and analysis was not conducted to demonstrate the structures are not contaminated with dangerous waste, they must be managed as dangerous waste. Radiation surveys will not suffice for determining appropriate management of these structures.	131. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Structures are described fully in Chapter 7.0. Additional information will be given here, to state: This closure plan addresses only the 3A Pond, 3B Pond, 3C Pond and the structures that interconnect them. These structures include the 216-B-353 Flow Control and Spillway Structure and the 216-B-354 Flow Control and Spillway Structure. Because the analytical results from the sampling efforts at the expansion ponds and the B-Pond System showed that dangerous waste constituents of concern were below action levels. No additional analyses at these structures are planned as part of this RCRA closure activity. Final disposition of the structures will be determined and handled under the 200-BP-11 Operable Unit remediation. This is based on an agreement reached during Unit Manager Meetings. This is recorded in the Meeting Minutes of August 12, 1993. It is listed as an agreement in the minutes as follows: The concrete structures and pipe now existing between the 216-B-3A pond and the 216-B-3B and -3C ponds for controlling flows are clean with respect to RCRA and WAC 173-303-610.	
132.	**Comment:** 6-2, 1-2 Elaborate on the basis for the determination that "no dangerous waste constituents [are] present at levels of concern [in the upper most aquifer]. Cite regulations imposing the groundwater monitoring requirements, reference source of concentrations used to evaluate "level of concern", and address duration, frequency, and results of monitoring. Address here, or in chapter 5, the requirements of WAC 173-303-650(2)(ii) which require compliance with the groundwater monitoring requirements of WAC 173-303-645. Specify where monitoring data is being compiled.	132. Concur October 6, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: The following information will be added to the text.

"The groundwater monitoring program is discussed in Chapter 5.0. Results of chemical analyses are contained in quarterly progress reports and in Appendix B." The reader will be referred to Chapter 5.0.

The following will also be added to this section:

There are two groundwater operable units associated with the 216-B-3 Expansion Ponds. These are the 200-BP-5 for the north part of 3A and 3B and 200-PO-1 for the south part of 3A and 3B and all of 3C. The intent is to clean close the expansion ponds, address the closure of the main pond and ditch with the 200-BP-11 operable unit, and address the closure of the groundwater operable units, 200-BP-5 and 200-PO-1, under CERCLA and RCRA requirements. Groundwater contamination concerns will be addressed under the closure activities associated with the 216-B-3 Main Pond.

133. **Comment:** 6-2, 12-15 Provide the regulatory citation or text that relieves requirements for monitoring subsoil and sediments when a TSD is clean closed.

133. Concur 8/18/94

The closure is intended to be for the expansion ponds as a unit, therefore, remove "these portions of' from the sentence.

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: There are no requirements to monitor subsoils and sediments. This sentence will be deleted. RCRA groundwater monitoring will continue as required by the 216-B-3 Main Pond which is in interim status and undergoing closure in an integrated effort with remediation of the 200-BP-11 Operable Unit.	
134.	**Comment:** 6-2, 15 Specify that the waste water to be discharged to the unit in the future will not contain constituents regulated under the Dangerous Waste Regulations, and that the discharge will be permitted under the Washington Waste Water Discharge Permit Program, WAC 173-216. **DOE-RL/WHC Response:** Agree, sentence will be changed as: "...routed to the 216-B-3 Expansion Ponds do not contain constituents regulated under the Washington State Dangerous Waste Regulations, and will be permitted under the Washington State Waste Discharge Permit program, WAC-173-216.	134. Concur 8/18/94
135.	**Comment:** 6-2, 22-25 Elaborate on the situation of B Pond being located above two past-practice groundwater operable units. Address potential for RCRA corrective action and postclosure in addition to discussion provided. **DOE-RL/WHC Response:** This information on groundwater was included with response to question 132.	135. Concur August 18, 1994
136.	**Comment:** 6-2, 27-43 Final disposition of potential radioactive contamination is not adequately addressed. Discuss alternative permanent solutions to meet the closure, TPA mandated, CERCLA, and corrective action requirements.	136. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The paragraph will be revised as follows: Radiation concerns at the 216-B-3 Expansion Ponds will be reevaluated under RCRA past-practice (RPP) operable unit. Radiation surveys will be performed at the Expansion Ponds. The 3A Pond will have a test pit dug in it to assess the amount of radioactive contamination. The 3A Pond will serve as the analog site for the 3B and 3C Ponds. Corrective measures will be assessed as part of the RPP remediation effort after characterization.	
137.	**Comment:** 6-2, 45-46 Address RCRA groundwater monitoring requirements. Cite chapter 5, if necessary.	137. Concur October 6, 1994
	DOE-RL/WHC Response: The reader will be referred to Chapter 5.0 for a discussion of the groundwater monitoring program for the 216-B-3A, -3B, and -3C Ponds.	
138.	**Comment:** 6-3, 27-29 The closure plan states that structures will be sampled in order to determine if clean closure requirements have been met. This is not consistent with page 6-1, 47-49, which indicates that the structures will be managed based on the results of radiation surveys. Modify text to clarify that the structures will be managed as dangerous waste unless demonstrated otherwise, in accordance with WAC 173-303-650(6)(a)(i).	138. Concur 8/18/94
	DOE-RL/WHC Response: The reference to the structures in this section will be deleted. See response to comment 131. It will be noted that final disposition of the structures will be addressed at the time of operable unit remediation.	

No.	Comments/Response	Concurrence
139.	**Comment:** 6-3, 40-41 Contaminants of concern is not the same term used and defined on page 6-1, 32 (constituents of concern). Define and use contaminants/constituents of concern consistently. Also see comment on 6-1, 31-34 and 6-1, 36. **DOE-RL/WHC Response:** The term contaminants of concern will be changed to constituents of concern. The dangerous waste constituents of concern are those identified in Section 6.1.	139. Concur August 18, 1994
140.	**Comment:** 6-3, 43-45 Delete the discussion to the main pond and ditch closure. **DOE-RL/WHC Response:** Agreed.	140. Concur 8/23/94
141.	**Comment:** 6-4, 9-13 Discuss the continued use of the 200 Area for industrial type activities and explain that the continued use of the ponds for waste water accumulation is not inconsistent with the surrounding land use and appearance (i.e., W-049 discharge basin will be located southeast of B Pond).	141. Concur August 23, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Text will be changed to include the following: After clean closure, the 216-B-3 Expansion Ponds will continue to receive nondangerous waste streams from operations in the Hanford 200 East Area. These nondangerous waste streams include the 241-A Tank Farm Cooling Water; the 244-AR Vault Cooling Water; the 284-E Power Plant Waste Water; the B Plant Cooling Water; the 242-A Evaporator Cooling Water; and the 242-A Evaporator Steam Condensate. These nondangerous waste streams will be permitted under the Washington State Waste Discharge Permit program, WAC-173-216. As future and continued use of the ponds is planned, and the ponds are currently configured to accept these nondangerous waste streams, no reclamation actions are necessary or planned.	
142.	**Comment:** Figure 6-1. It is not acceptable, nor appropriate to assume that final closure of the unit would be deferred to the operable unit. Delete box on lower left of page. Insert closure as surface impoundment.	142. Concur August 23, 1994
	DOE-RL/WHC Response: Wording will be changed to "Coordinate final closure with operable unit remediation". Title will be changed to: 216-B-3 Expansion Ponds RCRA Closure Logic Flow Diagram.	
143a.	**Comment:** It is necessary to define terminology and function for terms used throughout this chapter such as trip blanks, spikes, etc.	143a. Concur August 23, 1994
	DOE-RL/WHC Response: Information added. A list and explanation of the types Quality Assurance samples section has been added to the section on sampling methodology under Phase 2 sampling.	

No.	Comments/Response	Concurrence
143b.	**Comment:** Verify that information provided in appendices is consistent with discussions in the text. **DOE-RL/WHC Response:** A review and corrections have been made.	

No.	Comments/Response	Concurrence
143c.	**Comment:** 7-1, 7-12 Remove the word "possible" from the first sentence. The last sentence disregards the need to address groundwater, structures, and radioactive contamination. **DOE-RL/WHC Response:** Accept. The phrase "presence of possible" will be deleted. As is stated in Chapter 6.0, clean closure is being based on the results of vadose zone sampling. It has been agreed by Ecology, RL, and WHC that the structure are clean. If radioactive contamination is found, it will be handled as described in the response to comment number 136. The groundwater will be handled and remediated (as necessary) as part of the groundwater operable units. There are two groundwater operable units associated with the 216-B-3 Expansion Ponds. These are the 200-BP-5 for the north part of 3A and 3B and 200-PO-1 for the south part of 3A and 3B and all of 3C. The following will be added to the bullet: A three phase sampling effort, described in Section 7.1, shows that the expansion ponds are clean with respect to WAC-173-303-610(2)(b). Therefore, no cleanup action is required to clean closure the unit under RCRA. It will be noted the final disposition of the structures will be determined as part of the operable unit remediation. See comments 136 and 131.	143b. Concur August 23, 1994
144.	**Comment:** 7-1, 14-17 This bullet is confusing, contradicts itself, and appears to be inconsistent with 6-1, 45-49. Specify structures to be left in place and those expected to be removed.	144. Concur August 23, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: See comments 136 and 131.	
145.	**Comment:** 7-1, 30-32 Groundwater activities should and have been on-going. Groundwater impact assessment is a condition of clean closure of a RCRA TSD unit.	145. Concur August 23,1994

No.	Comments/Response	Concurrence

NOTE: The text discussing Phase 1 and Phase 3 sampling has been summarized in Chapter 7 of the closure plan. The details of those sampling and analyses efforts have been removed from the text and are provided in Appendices C and E. The reader is referenced to those appendices. This greatly affects the responses to comments 146 through 168 and 199 through 219.

DOE-RL/WHC Response: Text will be changed to "have been and will continue to be". Also the following text will be added: Results of chemical analyses are contained in quarterly progress reports and in Appendix B. Results of this groundwater monitoring indicate that there are no dangerous waste constituents present in levels of concern.

DOE-RL/WHC Response 2: See response to comment 132. These quarterly process reports are discussed and referenced in section 5.1 of the revised text.

No.	Comments/Response	Concurrence
146.	**Comment:** 7-2, 32-38 Specify the source(s) of information and quantify the time frame for "past waste disposal practices" in the first sentence. Elaborate on the term 'screening' in the last sentence. This leads to the assumption that laboratory analysis was not conducted for organics, pesticides, and PCBs. Explain rational for not conducting analysis for Appendix IX constituents on individual soil samples.	146. Concur September 19, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: Reader will be referred to Chapter 4.0 "Waste Characteristics" for specific information on sources and timeframe for past waste disposal practices.

This section of the closure plan has been revised [as discussed with Ecology (8/16/94)] to summarize the section. The sentence is no longer incorporated into text.

The word "screening" referred to actual laboratory analyses.

A section will be added to the introduction to this chapter explaining the sequence of sampling events. The clean closure strategy is based on the results of all three sampling events and process knowledge.

The following added to text:
In Phase 1 sampling and analyses were carried out on both individual samples and composite samples. Composite samples were prepared by mixing portions of individual samples from a particular pond area. Because information on potential waste characteristics (Chapter 4.0) indicated that inorganic constituents, including metals, certain ions, and radioisotopes, were the most potentially significant contaminants of concern, individual soil samples were analyzed mainly for inorganic constituents, but analyses also were carried out for organic constituents, including pesticides and PCBs.

Composite samples were analyzed for additional analytes (listed in Appendix C). These two lists together include the constituents on the 40 CFR 264 Appendix IX list of dangerous constituents. This list has been formulated by the EPA to represent the most common dangerous waste constituents.

No.	Comments/Response	Concurrence
147.	**Comment:** 7-2, 40-44 Explain rationale for only analyzing the composite soil samples for Appendix IX constituents. The list of analytes presented in appendix D of the closure plan do not address all Appendix IX constituents. This is inconsistent with the SW-846 methods which contain Appendix IX constituents. Explain how a decision was reached by USDOE and Ecology to clean close this unit based on a modified list. **DOE-RL/WHC Response:** This section of the closure plan refers back to Appendix C not Appendix D. The table in Appendix D which summarized the requested analyses for the earlier sampling effort was incomplete. Corrections have been made. The clean closure strategy was reached based on the results of the three sampling events as well as process knowledge. Individual and composite samples obtained during phase 1 sampling were analyzed for slightly different analyte lists, to focus the effort on the more likely contaminant. However, the two lists together include the constituents of Appendix IX.	147. Concur September 19, 1994

No.	Comments/Response	Concurrence
148.	**Comment:** 7-2, 47 The portion of the sentence that states "organics were not the primary chemical constituents used by the operating facilities that discharged to the 216-B-3 Pond system' is misleading. According to the Part A, Form 3, for the unit an estimated 1,478,000 pounds (qualified as total amount released) of hydrazine was released to the unit. Being that this is an organic substance, the large amount discharged, and the lack of detailed discharge records, it is inappropriate to diminish the significance of organics released to the unit. **DOE-RL/WHC Response:** This section of the closure plan has been revised as discussed with Ecology (8/16/94). Hydrazine is discussed in chapters 3 and 4 and will not be discussed in chapter 7. Information on chemicals used by operating facilities is presented in chapters 3 and 4. Hydrazine is generally classified as an inorganic substance.	148. Concur September 19, 1994
149.	**Comment:** 7-3, 1-3 Delete "represent threats to human health or the environment" and replace with reference to specific closure performance standards.	149. Concur September 19, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: This section of the closure plan has been revised as discussed with Ecology (8/16/94). Sentence is no longer incorporated into revised text. It will be noted at the beginning of this chapter, that Phase 1 and Phase 3 sampling were performed prior to the regulatory changes that effected closure performance standards and that the data should be considered in that perspective. There are concerns on presentation of the quality assurance and quality control aspects of the Phase 1 data. It will be emphasized that the Phase 2 sampling effort was performed to verify the results from the Phase 1 effort and that data from the Phase 2 sampling effort was evaluated with respect to current regulations. The evaluation of the data is presented later in the chapter and a summary is to be provided earlier. The reader will be referred to this summary.	
150.	**Comment:** 7-3, 5-8 More detail must be provided on field screening methods, instruments, and quality assurance.	150. Concur September 19, 1994
	DOE-RL/WHC Response: Section revised as discussed with Ecology (8/16/94). Sentence is no longer incorporated into revised text. This screening does not refer to field screening. This screening was performed for occupational safety only; not for analyses for closure decisions. Health and Safety personnel operated an HNU* photoionization detector to detect organics vapors and radiation protection personnel monitored radiological conditions with Geiger-Mueller counters. * HNU is a trademark of HNU Systems, Inc.	

No.	Comments/Response	Concurrence
151.	**Comment:** 7-3, 12 Provide a discussion of the rationale and/or references on which sampling methodology was based. If methodology was developed through the Data Quality Objective process, say so, and state that documentation of the process is available in the meeting minutes or administrative record. **DOE-RL/WHC Response:** Section revised as discussed with Ecology (8/16/94). Sentence is no longer incorporated into revised text. While there was no formal DQO process at the time of the first sampling effort (Phase 1 Sampling) at B-Pond, Ecology was kept aware and involved with the preparations for sampling and sampling [Reference: RD Izatt to RF Stanley, Correspondence No. 8902854, Notification of Soil and Sediment Sampling Activities at the B-Pond Treatment, Storage, and Disposal Unit (TSD# D-2-5), July 12, 1989.] Analytes were chosen based on consideration of Part A in place. The contract for analyses went through the PNL groundwater monitoring program (in place at the time of sampling) and used the parameters from that program. The Sampling and Analyses Plan, "216-B-3 Pond Characterization of the Hazardous Waste Inventory in the Near-Surface Soil and Sediments", WHC-SD-EN-AP-016 established the data quality levels. The report, Phase 1 Characterization of the 216-B-3 Pond (included as Appendix C of the Closure Plan) provides the statistical analysis on the data collected. the background samples were tested using the Shapiro-Wilke test. The use of this test is discussed in Statistical Methods for Environmental Pollution Monitoring, R. O. Gilbert, 1987. This test is used where there are a few number of samples.	151. Concur September 27, 1994

No.	Comments/Response	Concurrence
152.	**Comment:** 7-3, 21-28 If not familiar with the pond, I would not understand the reference to the trench within the A pond (and F7-1 adds no insight). Elaborate on the trench in A lobe and identify its location in one of the figures. **DOE-RL/WHC Response:** Section revised as discussed with Ecology (8/16/94). Sentence is no longer incorporated into revised text. Figures 7-1 has been revised to include the trench.	152. Concur September 19, 1994
153.	**Comment:** 7-3, 30-42 Refer to comment regarding 7-3, 12. Provide a discussion of the statistical significance of the number of samples collected and analyzed. **DOE-RL/WHC Response:** Section revised as discussed with Ecology (8/16/94). The sentence is no longer incorporated into the revised text. The reader is referred, in general, to Appendix C for details on sampling an analyses for Phase 1. Information for this comment is in Appendix C, section 2.2. The Sampling and Analyses Plan, "216-B-3 Pond Characterization of the Hazardous Waste Inventory in the Near-Surface Soil and Sediments", WHC-SD-EN-AP-016 established the data quality levels. The report, Phase 1 Characterization of the 216-B-3 Pond (included as Appendix C of the Closure Plan) provides the statistical analysis on the data collected. the background samples were tested using the Shapiro-Wilke test. The use of this test is discussed in Statistical Methods for Environmental Pollution Monitoring, R. O. Gilbert, 1987. This test is used where there are a few number of samples.	153. Concur September 27, 1994

No.	Comments/Response	Concurrence
154.	**Comment:** 7-3, 44-51 Discuss the disposition of the material excavated from B lobe and specify if sampling and analysis was conducted prior to disposal. It is stated that small quantities of water have been discharged to the B lobe as a result of seepage through the overflow control structure between the 3A and 3B Ponds .. and wave-topping the central structure. Address how the seepage was determined and quantified and explain what is considered "small quantities." Explain how wave-overtopping would have occurred between lobes, and if such action allowed material to disperse outside the TSD unit. Explain why over-topping occurred. It appears that the quantities of waste discharged exceeded the units design capacity. Address failure of dike between lobes A and B. This paragraph appears misleading because it only discusses small volume discharges to the B lobe from A lobe. Elaborate on the cause and extent, of the "disturbance" in the B lobe bottom.	154.

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Section revised as discussed with Ecology (8/16/94) to summarize this section. The text that this comment addresses is no longer incorporated into the closure plan. The disposition of the excavated material is discussed in Section 2.2.1 of this closure plan. The design control structures operate through an operating range with 18 inches of freeboard. The weir would overflow at 20 inches. On windy days the water in the 3A pond would become choppy and fill up the bottom of the overflow structure. This occasionally resulted in a small amount of water (described by employees as no more than a few gallons) ending up in the 3B Pond Stilling Basin. This water was never observed beyond the 3B Pond Stilling Basin. These observation were made during the daily inspections of the unit.	
155.	**Comment:** 7-4, 1-10 See comment regarding 7-3, 12.	155. Concur September 27, 1994
	DOE-RL/WHC Response: See response to comment 153.	
156.	**Comment:** 7-4, 11-32 See comment regarding 7-3, 12.	156. Concur September 27, 1994
	DOE-RL/WHC Response: See response to comment 153.	
157.	**Comment:** 7-4, 36-37 Elaborate on why surface background values were utilized to evaluate vadose zone contamination. Specify what analysis were conducted on background samples, and if they were collected and analyzed concurrently with the Phase I samples.	157. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: This section of the closure plan was revised as discussed with Ecology (8/16/94). The reader will be referred to the appendix for specifics on what analyses were conducted on which samples. It will be added that no additional **local** background samples were taken in conjunction with Phases 2 and 3. Information on the local background samples is in appendix C section 2.2, and figures 3. There were not enough samples taken during the local background determination to meet the requirements of MTCA B background. Added to text: The local background determined during Phase 1 sampling represented the range found in the Hanford Site Soil Background. Also, the Site-wide Part B permit section II.K.2 discusses the use of this Site-wide Background in RCRA closure activities.	
158.	**Comment:** 7-4, 45-46 Explain "best professional judgement." Specify if this was a joint decision with the regulators, or USDOE/WHC based. Explain how this decision was reached (i.e., DQO process, unit manager meetings, etc.). **DOE-RL/WHC Response:** See response to comment 151. This section of the closure plan has been revised as discussed with Ecology (8/16/94). This information is no longer incorporated into revised text.	158. Concur September 27, 1994
159.	**Comment:** 7-4, 52 Specify the location in which the split sample was taken. **DOE-RL/WHC Response:** The reader will be referred to Appendix C for specific sample locations.	159. Concur September 19, 1994

No.	Comments/Response	Concurrence
160.	**Comment:** 7-5, 1 Specify the location in which the duplicate sample was taken. **DOE-RL/WHC Response:** The reader will be referred to Appendix C for specific sample locations.	160. Concur September 19, 1994
161.	**Comment:** 7-5, 3-4 Explain the purpose for equipment blanks and why they were not taken. **DOE-RL/WHC Response:** As sampling occurred concurrently with sampling of the B-Pond system, no additional equipment blanks were required. Equipment blanks were taken the same days that these local background samples were taken. However, they were included in the Main Pond and 3B Pond sampling totals. The definitions for the QA samples (split samples, duplicate samples, and equipment blanks) will be added to the section on Phase 2 sampling and analyses. Equipment blanks consist of analyte-free media, clean silica sand, or clean water, which has been poured over or through the sampling device after decontamination, collected in the sample bottle, and transported to the laboratory for analysis. Equipment blanks test for residual contamination.	161. Concur September 19, 1994

No.	Comments/Response	Concurrence
162.	**Comment:** 7-5, 5-14 Elaborate on methods used when SW-846 methods were not available. Incorporate alternative methods into appendices or administrative record. Expand on the last sentence addressing QA/QC. Explain what precision and accuracy values were provided to the laboratory. Specify if these values were a requirement of the contract, or merely provided as an indicator of laboratory performance. State if the laboratory met the requirements specified in the contract. **DOE-RL/WHC Response:** Section revised as discussed with Ecology (8/16/94). This sentence is no longer incorporated into revised text. Existing SW-846 methods were used. Other standard methods (table C-9) were used as necessary. Sentence discussing QA/QC provided to the laboratories will be deleted. However, in response to the comment, QA/QC criteria is defined by the applicable method protocol (CLP, SW-846, or EPA method). QA/QC was evaluated during the data validation process.	162. Concur September 19, 1994
163.	**Comment:** 7-5, 18 The reference cited here is not included in chapter 9. **DOE-RL/WHC Response:** The document is Appendix C. The additional reference for it "(Kramer, 1991)" will be deleted.	163. Concur September 19, 1994
	Comment: 7-5, 16 It is crucial that the discussion provided in the text agree with the information provided in the appendices. This comment applies to all discussions of sampling and analysis conducted within this TSD unit. **DOE-RL/WHC Response:** Data in the table has been proofed against the report.	164. Concur September 19, 1994

No.	Comments/Response	Concurrence
165.	**Comment:** 7-5, 21-22 Explain the meaning and significance of "statistically dissimilar" and any implications it may have on the validity and applicability of the background values. **DOE-RL/WHC Response:** Phrase will be deleted. Information on the variability of the local background samples is provided in Appendix C, section 5.	165. Concur September 19, 1994
166.	**Comment:** 7-5, 30-31 Explain why most analytes were accepted as normally distributed. Hardin and Gilbert, *Comparing Statistical Tests for Detecting Soil Contamination Greater Than Background*, assumes that background has either a lognormal, or a Weibull distribution. **DOE-RL/WHC Response:** This section of the closure plan has been revised as discussed with Ecology (8/16/94). This sentence is no longer incorporated into revised text. This information is provided in Appendix C, Section 6.0. The assumption was tested using the Shapiro-Wilk test. A discussion of the computation and use of statistic is referenced.	166. Concur September 27, 1994
167.	**Comment:** 7-5, 31-33 Elaborate on the decision to accept the determination that background analytes are normally distributed. Explain distribution of zinc and zirconium values if they were neither normal, or log-normal. **DOE-RL/WHC Response:** A full explanation is provided in Apppendix C (page 25). The reader will be referred to Appendix C.	167. Concur September 27, 1994

No.	Comments/Response	Concurrence
168.	**Comment:** 7-5, 35-38 To diminish the significance of organics discharged to this unit is not appropriate. Explain why organic constituents were not considered of interest. Explain how common laboratory contaminants were distinguished from wastes potentially discharged to the unit. The phrase "meaningful quantities" is useless unless quantified. **DOE-RL/WHC Response:** The phrase "in meaningful quantities" will be deleted. Organic compounds of interest included volatile organic compound, semivolatile organics, chlorinated herbicides, chloropesticides, phosphorous pesticides, and polychlorinated biphenyls. Common laboratory contaminants include, for volatile organics: acetone, toluene, 2-butanone, and methylene chloride; for semivolatiles: phthalate esters. In addition, the results of blanks analyses can define contamination of the samples. It is also noted in Appendix C, that at the time of these analyses, methyl ethyl ketone was a suspected laboratory contaminant (originating from fresh paint in one of the laboratory rooms and reported in the quarterly QC report). The results from the Phase 1 sampling effort did not show any organic compounds in the samples from the 3A, 3B, and 3C Ponds, except for low concentrations of common laboratory contaminants. These compounds included: acetone, with a maximum concentration of 42 ppb; methyl ethyl ketone, with a maximum concentration of 12 ppb; and methylene chloride, found in one sample at 6 ppb. Based on comparison with QA samples (field duplicates and blanks) these volatile organic compounds were dismissed as due to probable laboratory contamination. Details on the evaluation of the organics data for Phase 1 sampling is provided in Appendix C. This section was revised as discussed with Ecology (8/16/94). This response is not incorporated into revised text.	168. Concur September 27, 1994

No.	Comments/Response	Concurrence
169.	**Comment:** 7-5, 45-47 The first sentence of this paragraph is misleading. The Phase 2 sampling was conducted due to concerns about the quality assurance and quality control procedures of the laboratory conducting the Phase 1 analysis. It may be appropriate to state that this event confirmed or supported the Phase 1 data but remove the phrase "to develop a more complete assessment." This statement also appears to be inconsistent with the text provided in 7.1.3.1. **DOE-RL/WHC Response:** Accept. The phrase will be deleted.	169. Concur September 27, 1994
170.	**Comment:** 7-6, 1-3 See comment regarding 7-3, 12. **DOE-RL/WHC Response:** See response to comment 151.	170. Concur September 27, 1994
171.	**Comment:** 7-6, 3 The document cited is not included in chapter 9. **DOE-RL/WHC Response:** The document is Appendix D. The additional reference for it "(Blumenkranz, 1993)" will be deleted.	171. Concur September 27, 1994
172.	**Comment:** 7-6, 11-17 Provide more detail and rationale for choosing analytes of interest, screening technics, and priority of analytes. Explain why trip blanks were only analyzed for volatile organics. The laboratory(ies) performing Phase 1 sampling was not specified. Correct inconsistency. Specify exactly what samples Weston analyzed and why only split samples where analyzed by TMA/NORCAL. Specify if these were the only laboratories involved in analyzing Phase 2 samples.	172. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The first sentence will be changed to: Soil samples were analyzed for inorganic constituents, including metals and radionuclides, and for organics constituents, including volatile organic compounds, semivolatile compounds, pesticides and PCBs. As specified in SW-846, Revision 1, July 1992, trip blanks are useful in documenting contamination of volatile organic samples. Trip blanks look for contamination from the cleaning and handling process, which are most likely to be volatile organic compounds. However, the reference to trip blanks will be removed from this paragraph. Definitions for the applicable quality assurance samples will be added to the following section "Sampling Methodology". Sentence will be revised as follows: The Roy F. Weston Laboratory, Lionville, Pennsylvania, was used as the primary laboratory. Weston Laboratory subcontracted EcoTeck Laboratory Services Incorporated to perform the radiochemical analyses. TMA/NORCAL, Richmond, California was used as the secondary laboratory, analyzing split samples only.	
173.	**Comment:** 7-6, 21-36 Describe the basis for choosing sample locations (DQO, referenced guidance, nature of contaminants, etc.).	173. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The basis for choosing specific sample locations is given in this section. In lieu of a formal DQO meeting on the sampling event, Ecology and RL and WHC maintained discussions of the sampling during Unit Managers Meeting. While there was no formal DQO meeting for the Phase 2 sampling, the sampling methodology was discussed in detail with the Ecology unit manager during Unit Manager Meetings (UMM). The sampling locations were discussed with Ecology during a presentation during the July 24, 1992 Unit Managers Meeting. During the meeting (and noted in the minutes) Ecology agreed with the sample locations. [Reference UMM minutes: June 25, 1992 and July 7, 1992. Also, reference correspondence: RD Izatt, RL and RE Lerch, WHC to PT Day, EPA and DB Jansen, Ecology, July 14, 1992, Phase 2 Sampling of the 216-B-3B and 216-B-3C Expansion Ponds; EA Wiley, Ecology to RD Izatt, RL, August 4, 1992, Re: Phase 2 sampling of the 216-B-3B and 216-B-3C Expansion Ponds (M-20); and, EA Wiley, Ecology to Bob McLeod, RL, September 1, 1992, Sampling of the 216 B-Pond Site (M-20).]. Text will be changed to: A formal Data Quality Objective (DQO) process was not performed for this sampling event. However, Ecology, RL, and WHC discussed the sampling event and methodology during Unit Managers' Meetings.	
174.	**Comment:** 7-6, 42-44 Specify which ponds were active at this time and the reason(s) why Ecology felt water samples should be collected. Provide discussion on the location and methodology for collecting water samples, the analytical results of the water samples, and how collection and analysis may have differed from soil analysis. Specify where the water analytical results are located and how they are distinguished from the soil data provided in the appendices.	174. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The first sentence of the previous paragraph states the 3A and the 3C Ponds were "currently" receiving waste water and the sentence goes on to describe how the water depth was measured in these two ponds; however, a note will be added to specify which ponds have water. The additional requested information is provided in Appendix D; the reader will be referred to Appendix D. Sample location is discussed in the next section of the closure plan which refers the reader to Appendix D. The Ecology Unit Manager made the decision to take the water sample. WHC simply took a water sample from the same location as the Ecology representative. In Appendix D, the samples are differentiated from the soil samples by stating the matrix as water. A dip method was used to collect the water samples. A new stainless steel dip beaker, precleaned by the manufacturer, was used.	
175.	**Comment:** 7-6, 46-52 The first sentence refers back to Phase 1 section. The section describing Phase 1 sampling was not adequate, therefore, the deficiencies regarding that section are applicable to this section. The commingling of borings in a stainless steel bowl would account for the lack of detection of volatile organics from laboratory analysis. **DOE-RL/WHC Response:** The information here summarizes sampling methodology. The reader is referred to the appendices for addition information. No change to text.	175. Concur September 27, 1994

No.	Comments/Response	Concurrence
176.	**Comment:** 7-7, 2-4 Include applicable sections, of the appropriate date, of all internal manuals cited either in the closure plan itself, or in the administrative record. Specify types and specifications of radiation monitoring equipment. The last sentence is confusing. It may be helpful to specify that sampling personnel used the boat as a sampling platform. **DOE-RL/WHC Response:** Manuals are in the Administrative Record. Reference will be changed to WHC-CM-4-10. Sentence will be changed to: Sampling personnel used the flat-bottomed aluminum boats as a sampling platform while sampling from the 3A Pond. The sample media were monitored for radiation as a standard operating procedure to ensure worker safety.	176. Concur September 27, 1994
177.	**Comment:** 7-7, 21-24 Elaborate on the term "surface contamination." Indicate surface contamination area on an areal map of the pond. **DOE-RL/WHC Response:** The sentence is deleted from the text. The reader will be referred to the revised figure 7-1 for sample locations.	177. Concur September 27, 1994
178.	**Comment:** 7-7, 27-28 Define "discrete" and specify number of samples collected at this point. **DOE-RL/WHC Response:** The term "discrete" will be deleted. The text will be changed to: A sample of the surface soil and a second sample from the underlying soils were taken at this point.	178. Concur September 27, 1994
179.	**Comment:** 7-7, 42-49 Provide rationale and/or reference guidance used to determine appropriate QA/QC. **DOE-RL/WHC Response:** The sampling methodology was discussed with the Ecology Unit Manager prior to sampling. Added to text: Sampling QA followed SW-846 recommendations.	179. Concur September 27, 1994

No.	Comments/Response	Concurrence
180.	**Comment:** 7-7,52 - 7-8, 2 Indicate which metals were analyzed by which method, and the rationale for utilizing two different methods. **DOE-RL/WHC Response:** Text changed to: Phase 2 samples were analyzed by SW-846 methods (EPA 1986b) when available. Metals were analyzed either by the inductively coupled plasma (ICP) method or the graphite furnace atomic absorption (GFAA) method. To obtain better detection limits, GFAA was used for arsenic, lead, selenium, and thallium determinations. Mercury was analyzed by Cold Vapor Atomic Adsorption. Determinations for gross radioactivity and for strontium-90 followed laboratory-specific procedures.	180. Concur September 27, 1994
181.	**Comment:** 7-8, 3-4 SW-846 lists the 9000 series for radiological analyses which contradicts the statement that there are no SW-846 radiological methods. **DOE-RL/WHC Response:** Radiochemical analyses by SW-846 methods are limited; there is no SW-846 method for strontium-90. However, the reference to SW-846 methods will be deleted. Due to the lack of SW-846 guidance, laboratory specific procedures were used.	181. Concur September 27, 1994
182.	**Comment:** 7-8, 43 Specify if detection limits addressed here are method, or instrument limits. **DOE-RL/WHC Response:** As is stated in EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses, the Contract Required Detection Limits for metals are the instrument detection limits obtained in pure water that must be met using the prescribed procedure. Detection limits for samples may be higher depending on the sample matrix. Text changed to include this information.	182. Concur September 27, 1994

No.	Comments/Response	Concurrence
183.	**Comment:** 7-8, 7-8 Incorporate applicable section, of appropriate date, of the cited internal document in the closure plan or administrative record. Describe the regulatory driver and significance for level B validation. **DOE-RL/WHC Response:** There is no regulatory driver to validate RCRA data. Level B validation (as defined in the Sample management and Administration Manual, WHC-CM-5-3, 1990) has been determined to be sufficient for decision making for this study. The discussion here is to define and describe this level of validation.	183. Concur September 27, 1994
184.	**Comment:** 7-8, 26-27 Specify if it is common practice for analytical laboratories to prepare their own blanks, and if so, provide rationale. **DOE-RL/WHC Response:** Yes, the blanks referred to in this section were reagent grade water and carried though all the steps in the method. Laboratory blanks are routinely required for examining quality control within the laboratory. They are prepared and analyzed to determine potential laboratory contamination. This information will be added to the text.	184. Concur September 27, 1994
185.	**Comment:** 7-8, 39 Discuss other possibilities besides laboratory contamination for detecting metals in vadose zone samples. Specify if any of the metals detected in the soil analysis have been detected in the groundwater monitoring.	185. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: This section refers to analyses of blanks that were prepared in the laboratory. All analytes detected can be assumed to be due to laboratory contamination or contamination of laboratory equipment. All analytes detected are noted to be at the less than the CRQL or CRDL levels. As per EPA guidelines Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis, if the concentration of the blank is less than the CRDL corrective action is not required to be taken by the laboratory. As is stated in the text, analytes detected in the metals blanks were at levels less than the CRDL. It is common to see small blank contamination at these "noise" levels.	
186.	**Comment:** 7-8, 41-52 Define "contract-required quantitation limit" and "blank validation criteria." Reference applicable guidance or regulations. The discussion of QA/QC provided in the text to this point indicates there has been no independent oversight or evaluation of the laboratories conducting the analysis. Describe any independent performance oversight and/or auditing program imposed on the analytical laboratories performing analysis associated with this closure.	186. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Contract required quantitation limit is defined as: The minimum level of quantitation on a per sample basis, acceptable under the contractual Statement of Work (SOW) when the final sample extract is analyzed undiluted. This limit will vary as a function of the dilution factor and of the percent moisture. The CRQL is established by protocol as the lowest calibration standard concentration. This information will be added to the text. Blank validation criteria is the validation criteria (procedure) as applied to blanks. This information is described in the data validation document referenced earlier. WHC-CM-5-3 contains a procedure for assessment of off-site laboratories. WHC Analytical Services and WHC Quality Assurance organizations normally perform an assessment every six months at each laboratory.	
187.	**Comment:** 7-9, 14-16 Explain control limits and qualification of data.	187. Concur September 27, 1994
	DOE-RL/WHC Response: Control Limits are the range within which specified QC results must fall to be compliant. Control limits may be mandatory, requiring corrective action if exceeded, or advisory. Control limits have been set within the laboratory statement of work or by method protocols for the relative percent difference (RPD) to which this section refers. Data associated with results that fall outside control limits are evaluated through the data evaluation process and may be qualified. The second sentence of the preceding paragraph will be changed to reflect that control limits apply to QC data. No other information will be added to the text.	

No.	Comments/Response	Concurrence
188.	**Comment:** 7-9, 18-24 Explain why CLP protocols were performed instead of SW-846 methods. Describe any "minimal" impacts on data results and comparability to other data sets. Elaborate on "qualifiers' and where they are located. Explain who "project personnel" are, and the basis for their decision. **DOE-RL/WHC Response:** SW-846 protocol was requested from the laboratory but CLP analyses were run. The protocol used was determined to be of adequate comparability. The qualifiers are listed with the data tables in Appendix D. The qualifiers are further defined in Appendix D. Project personnel refer to all personnel at WHC and DOE-RL involved with interpreting and evaluating the data. Results were discussed with Ecology representatives during UMMs. Added to text: The use of CLP protocols is expected to have minimal impact on the data as the equipment and methods are analogous.	188. Concur October 6, 1994
189.	**Comment:** 7-9, 29-31 Describe how long the holding time was missed for the two samples. Explain how the samples were qualified "according to holding time exceedance," and how this would impact the usefulness of this data point.	189. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: As is stated in Appendix D (to which the reader has been referred for additional information). The holding time criteria has been established for water samples not for soil samples. This holding time for water samples was exceeded by 42 days. Added to text: The holding times for these two cyanide analyses were exceeded by 42 days. The report results have been qualified according to the validation procedure. In addition, both cyanide samples were split samples and cyanide data, from the samples analyzed within holding time, exist in the Weston data for both sampling locations. The cyanide results from both laboratories were consistent. Therefore, any limitations on the use of the cyanide results for these samples are expected to have minimal impact of data interpretation.	
190.	**Comment:** 7-9, 44-50 Explain why compounds are listed as laboratory contaminants if they are below the contract-required quantitation limit. Explain why such a large number of compounds were identified as laboratory contaminants. See comment regarding 7-8, 39. **DOE-RL/WHC Response:** The compounds listed were detected in the blanks at the TMA laboratory. Therefore, they are considered potential laboratory contamination. In the case of the compounds listed as detected below the CRDL, the laboratory was able to reach a better than contract required detection limit with their instrument detection limits. No change to text.	190. Concur September 27, 1994
191.	**Comment:** 7-9, 48 Explain "target compounds" and "tentatively identified compounds" and why they are not of concern if below contract-required quantitation limit.	191. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Target compounds are the organic compounds designated by the contractual SOW or method protocols for analysis. Tentatively Identified Compounds (TICs) are compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates. These peaks in the chromatogram are subjected to mass spectral library searches for tentative identification. These compounds in this case have not been listed as "not of concern"; they have been listed as "estimated". This is a laboratory applied qualified which is used when estimating concentrations of TICs or when the identification of a Target Compound is confirmed at a concentration less then the CRQL. No change to text.	
192.	**Comment:** 7-10, 1 Specify if contract-required detection limit is instrument, or method limit.	192. Concur September 28, 1994
	DOE-RL/WHC Response: The contract-required detection limit is an instrument detection limit. It was established using quarterly Instrument Detection Limits. This information will be added to the text earlier in this section.	
193.	**Comment:** 7-10, 5-14 Quantify how far out of the control limits the listed metals were, and explain the impact on the usefulness of this data (i.e., what does it mean to qualify the data).	193. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Added to text: The meaning of the data qualifiers is listed in Appendix D. The associated data and validation documentation has been submitted to Ecology and provides additional details on anomalies. No change to text.	
194.	**Comment:** 7-10, 26-32 Analytical results are to be compared to closure performance standards, not the values presented in the *Hanford Site Background* document. Specify the source of the *Hanford Site Background* threshold values (1993). Specify the MTCA method used to calculate limits (i.e., A or B) and explain that it is now appropriate to use such values due to regulatory revisions. **DOE-RL/WHC Response:** The reference for the Hanford Site Background document will be included in Chapter 9.0. Additional information on the source document is provided in Appendix D (to which the reader is referred). MTCA allows the use of background as a clean-up level. The use of Hanford Site Background is discussed in response to comment number 195. See revised tables 7-1, 7-2, and 7-3.	194. Concur September 28, 1994
195.	**Comment:** 7-10, 3440 Ecology has not approved the *Hanford Site Background* document, therefore, the discussion provided in the text is not appropriate. Also the use of *Hanford Site Background* approach in evaluating the Phase 2 data is not consistent with the evaluation of Phase 1 data, which used only local background. If *Hanford Site Background* values were used, a thorough discussion of the difference between local and Sitewide background values must be provided.	195. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Hanford Site Background was not available when Phase 1 sampling was performed and evaluated. See discussion in revised 7.1.1. The use of Hanford Site Background for Phase 2 sampling was discussed with the Ecology Unit Manager during the Unit Managers Meetings prior to actual sampling. The use of the Hanford Site Soil Background is referenced in the Hanford Facility Permit section II.K.2.	
196.	**Comment:** 7-10, 48-49 Specify the concentration in parts per million, or billion, for toluene, methylene chloride, and acetone described here as common laboratory contaminants. Explain the rationale for considering these compounds common laboratory contaminants.	196. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: This information (specific concentrations) is provided in Appendix D. Common laboratory contaminants include: methylene chloride, acetone, toluene and 2-butanone (reference: WHC-SD-EN-SPP, which is the data validation reference for the Phase 2 data). As is stated in the USEPA Contract Laboratory Program national Functional Guidelines for Organic Data Review (Revised June 1991), Section V, Blanks, "common volatile laboratory contaminants (methylene chloride, acetone, and 2-butanone).." The sentences will be revised to state that acetone, toluene, methylene chloride (all common laboratory contaminants) were found in the low part per billion levels in some samples. Two samples showed higher concentrations, over 100 ppb. Both of these samples were from very dry surface soil samples from 3B Pond, which are not expected to retain volatile compounds.	
197.	**Comment:** 7-11, 6-10 Quantify the phrase "very low levels" (i.e., below background and MTCA method B values). Provide a theory or explanation of how trip blanks were contaminated. **DOE-RL/WHC Response:** Exact concentration values are listed in Appendix D. The "very low levels" listed for semivolatiles are at the 5 ppb or less level. This information will be included. However, as is stated in the revised section 7.1.3.3. "Sampling Methodology" contamination in a trip blank usually indicates contamination attributable to shipping and field handling procedures.	197. Concur September 28, 1994

No.	Comments/Response	Concurrence
198.	**Comment:** 7-11, 24-27 The purpose of the sampling and analysis is not to designate the soil and sediments, but to determine if closure performance standards have been achieved. State if any of the contaminants exceeded MTCA method B levels (method A for lead) or local background. **DOE-RL/WHC Response:** The last sentence of the paragraph (the reference to classification as a dangerous waste) will be deleted. In addition, the following will be added: All metal analytes detected above background levels were below the applicable MTCA cleanup levels.	198. Concur September 28, 1994
199.	**Comment:** 7-11, 36 Elaborate on the phrase "chemical analyses similar to those performed on Phase 1." Specify if the list of analytes and analytical procedures differed, and if so, why. **DOE-RL/WHC Response:** The reader will be referenced to Table 7-3 and Appendix E for the specific analyses performed.	199. Concur September 28, 1994
	Comment: 7-12, 5-7 Explain why SW-846 was not used for all sample analyzed. The terms "wet-chemistry" and "ions" are not descriptive. Explain the terms and how they differ from SW-846. **DOE-RL/WHC Response:** See response to comment 162. The metals were analyzed using EPA SW-846 methods, the anions and ammonia were analyzed using the EPA Methods for Chemical Analysis of Water and Waste. The reader will be referred to Appendix E for details of Phase 3 sampling and analyses.	200. Concur September 28, 1994
201.	**Comment:** 7-12, 40-42 Include pertinent sections of document, of appropriate date, in the closure plan or in the administrative record.	201. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: To remain consistent with the Closure Plans, the EII's are referenced only. The EIIs have been made available to Ecology; therefore no change is required in this closure plan. The EII's were written to make it unnecessary to rewrite the procedures each time they were used. The current versions of the EII's are replicated and made available to the field personnel, as necessary. Standard practice is for the personnel to be trained and familiar with the current EII's before going into the field. Section revised as discussed with Ecology (8/16/94). Response is no longer incorporated into revised text.	
202.	**Comment:** 7-13, 5-7 Explain how the addition of water facilitates drilling and sampling recovery, and the impact on samples taken following the addition of water (i.e., potential dilution). Discuss measures taken to mitigate the impact on the data to be generated from this sampling point.	202. Concur. September 28, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: Section revised as discussed with Ecology (8/16/94). This response is not incorporated into the revised text.

Water is poured down the borehole in order to facilitate efficient drilling and retrieve the cuttings. In hard tool drilling casing is advanced at near the same rate as the borehole is being drilled. The drilling process in itself breaks up rock in the formation and produces fine grained material known as chips or cuttings. These "cuttings" accumulate within the casing and impede the borehole advancement by blocking the path of the drill bit to the borehole face. In order for the drilling effort to progress these cuttings must be removed. To remove the cuttings water is poured down the casing, during drilling, which produces high viscous mud. As drilling continues the cuttings are forced up into the mud and are held there in suspension until a large enough quantity of mud accumulates and must be removed. The mud is removed by pulling the drilling tools out of the borehole and deploying a bailer to retrieve the mud containing the cuttings. The bailer has a one way hinge that is in the open position when being lowered down the borehole and closes when the bailer is being pulled back to the surface.

Information in Appendix E states which samples (by sample number) may have been affected by the additional of water. In the 3A Pond several feet of soil remained above the intervals at which the next sample was collected.

203. **Comment:** 7-13, 17 Include applicable section, of appropriate date, in closure plan or administrative record of the document cited.

203. Concur
September 28, 1994

DOE-RL/WHC Response: See response to comment 201.

204. **Comment:** 7-13, 31-33 Include applicable section, of appropriate date, in the closure plan or administrative record of document cited.

204. concur
September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: See response to comment 201.	
205.	**Comment:** 7-13, 48-51 Explain how the addition of water facilitates drilling.	205. Concur September 28, 1994
	DOE-RL/WHC Response: See response to comment 202.	
206.	**Comment:** 7-14, 3-5 Explain how the addition of water facilitates drilling and sampling recovery, and the impact on samples taken following the addition of water (i.e., potential dilution). Discuss measures taken to mitigate or minimize the impact on the data to be generated from this sampling point.	206. Concur September 28, 1994
	DOE-RL/WHC Response: See response to comment 202.	
207.	**Comment:** 7-14, 11 Include applicable section, of appropriate date, in closure plan or administrative record of the document cited.	207. Concur September 28, 1994
	DOE-RL/WHC Response: See response to comment 201.	
208.	**Comment:** 7-14, 49 Include applicable section, of appropriate date, in closure plan or administrative record of the document cited.	208. Concur September 28, 1994
	DOE-RL/WHC Response: See response to comment 201.	
209.	**Comment:** 7-15, 16-22 Explain why so many different laboratories were used to analyze the data and potential impacts this may have had on the analytical results. Specify which samples went to which laboratory and why.	209. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Not all laboratories are capable of all analyses. Westinghouse submitted samples to two laboratories. A primary laboratory, Martin Marietta's K-25 laboratory, and a secondary laboratory (to perform split samples for quality assurance purposes), Roy F. Weston laboratories. The primary laboratory, Martin Marietta, subcontracted some analyses to IT Analytical Services. The secondary laboratory, Weston, subcontracted radiochemical analyses to Teledyne laboratories. For any one analyte, the analyses were performed at only two laboratories, a primary laboratory and a split laboratory.	
210.	**Comment:** 7-15, 24-28 Explain why CLP was used, and why certain analytes were excluded from analysis. **DOE-RL/WHC Response:** The use of CLP methods was agreed to by Ecology during Unit Managers' Meetings. The use of CLP protocols is expected to have minimal impact on the data as the equipment and methods are analogous. Due to lack of sample volume, analyses were prioritized for the secondary laboratory. The primary laboratory performed the full analyses. (While certain specific analyses were not performed by the secondary laboratory, a large number of analyses were.)	210.
211.	**Comment:** 7-15, 31-34 Explain the basis and results of the statistical evaluation of results reported for split samples. The number of split samples collected did not appear adequate to conduct a meaningful statistical analysis. State if the number of samples were sufficient to assess the laboratories performance, and if so, which was more accurate, or precise.	211. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Section revised as discussed with Ecoloyg (8/16/94). Sentence is no longer in revised section. Information is contained in Appendix E.	
212.	**Comment:** 7-15, 37-39 Specify if SW-846 or contractor laboratory-specified methods were used for organic analysis, or if both were performed. Explain the rationale for conducting different methods.	212. Concur September 28, 1994
	DOE-RL/WHC Response: This specific information is provided in Appendix E. The reader will be referred the appendix.	
213.	**Comment:** 7-15, 46 Explain why only one split sample was analyzed for semivolatiles by EPA 8270.	213. Concur September 28, 1994
	DOE-RL/WHC Response: Other splits were performed by CLP. Information is not available on why one was performed by EPA 8270. As this information is not necessary for closure decisions, this sentence will be deleted from the text.	
214.	**Comment:** 7-15, 51 Define 'BNA" compounds.	214. Concur September 28, 1994
	DOE-RL/WHC Response: BNA refers to Base, Neutral, Acid compounds. These are semivolatile organic extractables. In the text of the closure plan the term semivolatile organic compounds will be used.	
	Section revised as discussed with Ecology (8/16/94). This response is no longer incorporated into revised text.	
215.	**Comment:** 7-16, 5-12 Elaborate on the implications of missing holding times for the analytical data, especially the volatile and semi-volatile organic compounds.	215. Concur September 28, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Added to text: Data were validated according to the WHC procedure WHC-CM-5-3 (WHC, 1990). Although data from Phase 3 were validated based on criteria for water samples, these holding time requirements are not considered technically proper for application to soil samples. For soil s, the more important holding time is the forty days allowed after extraction before analyses. These holding times were met.	
216.	**Comment:** 7-16, 14-21 Explicitly explain the basis for concluding that the primary laboratory reported biased concentrations and not the other laboratory. Elaborate on Phase 1 threshold values (i.e., local background, MTCA method B levels). "EPA protective trigger level for further investigation' is not a WAC 173-303-610 closure performance standard, therefore, delete it from the text. The last portion of the sentence states, "Ecology's MTCA Method A" cleanup level for industrial soil. MTCA level C, not A, is applicable to industrial sites. Clean closure, that which is proposed for this site, is accomplished by achieving MTCA A or B cleanup levels. **DOE-RL/WHC Response:** Reference to the primary laboratory being bias has been deleted. The reference to the EPA protective trigger has been deleted. The table for MTCA Method A for Industrial Soil is listed in WAC 173-340-745. The MTCA Method A table for industrial soil was inappropriately used in the text of the previous version of the closure plan. This has been corrected to MTCA Method B. An evaluation of the data from Phase 3 sampling with respect to MTCA Method B will be provided in an earlier section of the chapter.	216. Concur September 28, 1994

No.	Comments/Response	Concurrence
217.	**Comment:** 7-16, 23 Thoroughly discuss potential groundwater contamination by beryllium which was found in the vadose zone at levels above MTCA method B cleanup levels. Beryllium is moderately mobile and is very soluble as beryllium fluoride and beryllium nitrate. Address the impact of allowing further water discharges to occur at the unit. **DOE-RL/WHC Response:** The concentrations of beryllium found (highest at 0.88 ppm) are all well below the Hanford Site Background threshold value (1.8 ppm) and therefore beryllium is not considered a contaminant. Concern on the use of Hanford Site Background is covered in the response to comment 7-10, 34-40. No change to text.	217. Concur September 28, 1994
	Comment: 7-16, 27-31 Describe how the beryllium concentration, and contract required quantitation limits, compare to MTCA cleanup levels and to local background levels. Specify which "natural background" is being used in this paragraph (Sitewide or local). **DOE-RL/WHC Response:** See response to comment 217.	218. Concur September 28, 1994

No.	Comments/Response	Concurrence
	Comment: 7-17, 5-12 The objective of the sampling and analysis of the pond media is not to designate it as a dangerous waste, but to determine the most appropriate mode of closure. This paragraph is quite alarming due to the fact that closure performance standards are not even addressed. In fact, an apparent lack of knowledge of the closure requirements is demonstrated. Again, the results of the soil, sediment, and water analysis are to be compared with the closure performance standards presented in WAC-173-303-610. To determine if the clean closure requirements have been met, the analytical data must indicate that any (if any) contamination at the unit is at concentrations that are at or below local site background or MTCA method B levels, period.	219. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Phase 3 Sampling was performed and evaluated under a previous revision of the WAC which gave Waste Designation Limits as a closure performance standard. The introduction to the sections on sampling data evaluation will be revised to state that these are meant as summaries of the reports attached as appendices C and D. And that these reports were prepared prior to the revision of the WAC. Also, a section will be added to the beginning of this chapter, which will include a summary interpretation of the results of Phase 1 and Phase 3 data compared with current performance standards, MTCA B and Hanford Site-wide Background. The paragraph will be deleted and the following text incorporated: The results of the Phase 3 sampling effort were evaluated with respect to local background concentrations and dangerous waste designation limits. As is discussed in revised section 7.1.1, no apparent basis was found for regulation of the vadose zone soil of the expansion ponds. When the Phase 3 data is evaluated with respect to current RCRA closure performance standards, the results indicate that concentrations of contaminants found are less than current cleanup standards. Also, the soil sampling and analyses summary (revised section 7.1.1) will state that the previous version of the WAC used Waste Designation Limits for state-only waste.	
220.	**Comment:** 7-17, 27 Due to the lack of understanding demonstrated in the previous section, every use of the term action level should be re-evaluated. See previous comment. **DOE-RL/WHC Response:** See response to previous comment.	220. Concur October 6, 1994

No.	Comments/Response	Concurrence
221.	**Comment:** 7-17, 38 Typo makes sentence difficult to understand. **DOE-RL/WHC Response:** Agreed -- however, it has been determined that interim stabilization is not required at the 3A Pond, therefore Section 7.2 will be deleted.	221. Concur October 6, 1994
222.	**Comment:** 7-19, 3 Include applicable section, of appropriate date, in closure plan or administrative record. **DOE-RL/WHC Response:** See response to 221. Section Deleted.	222. Concur October 6, 1994
223.	**Comment:** 7-19, 19-20 All items out of compliance must be reported to Ecology. Items which cannot be or are not immediately fixed, need to be specified when reporting to Ecology. **DOE-RL/WHC Response:** See response to 221. Section Deleted.	223. Concur October 6, 1994
224.	**Comment:** 7-19, 33 The "final report" must also be submitted to Ecology. **DOE-RL/WHC Response:** See response to 221. Section Deleted.	224. Concur October 6, 1994

No.	Comments/Response	Concurrence
225.	**Comment:** 7-20, 12-14 It is stated that the piezometers will be maintained for continued use to monitor seepage through the dike. Earlier in the text, it was noted that some of the piezometers are not functioning and, it is unclear which are operating properly and which are not. Some of the piezometers were said not to be contacting the surface of the water table. Modify text to correct inconsistency, and reflect the actual status and expected disposition of the piezometers. **DOE-RL/WHC Response:** Accept. The piezometers will be removed from service and abandoned per WAC 173-160. This information will be added to this section.	225. Concur August 25, 1994
226.	**Comment:** 7-20, 16-31 This section applies to the (other) closure of the main pond and ditch. To avoid confusion, explicitly state that this applies to the main pond/ditch unit closure.	226. Concur August 23, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: Accept. As this information does not deal with this specific TSD, the Expansion Ponds, this section will be deleted from the text. However, similar information will be added to the previous section as discussed in comment 225.

> Elaborate on the groundwater monitoring borehole (699-43-42). Where is it located in relation to the units, when was it installed, and for what purpose, how long has it been out of service, and how will this impact groundwater data accumulation and evaluation. Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

The groundwater monitoring borehole is associated with the B-Pond Main and will be deleted from this section. Groundwater monitoring information is provided in Chapter 5.0.

The location of the borehole will be provided with information in Chapter 5.

227. **Comment:** 7-21, 12-14 The discussion to consolidate the concrete demolition waste and the need for sampling is still pending. This cannot be decided until disposal options are identified.

227. Concur August 23, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Text added: The analytical results from the sampling efforts at the expansion ponds and the B-Pond System showed that dangerous waste constituents of concern were below action levels. No additional analyses at these structures are planned as part of this RCRA closure activity. Final disposition of the structures will be determined as part of the operable unit remediation. This is based on an agreement reached during Unit Manager Meetings. This is recorded in the Meeting Minutes of August 12, 1993. It is listed as an agreement the minutes as follows: The concrete structures and pipe now existing between the 216-B-3A pond and the 216-B-3B and -3C ponds for controlling flows are clean with respect to RCRA and WAC 173-303-610. No additional action will be taken under RCRA closure. Final disposition of the structures will be determined as part of the operable unit remediation. Revised section 7.2.2 will state that the structures will be addressed during the RCRA Past Practice operable unit remediation/216-B-3 Main Pond closure. This was discussed in September 1994 Unit Manager Meeting.	
228.	**Comment:** 7-21, 17-30 The concern for potential radioactive contamination implies that there is possible chemical contamination. Indicate where radiologically released waste would be disposed. Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.	228. Concur August 23, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The reference was incorrectly listed as 7.2.8; it should have been 7.3.4.8. See response to comment 227. Radiation surveys are standard procedures prior to releasing or disposing of material from the Hanford Site. However, a revision of this section has removed this sentence.	
229.	**Comment:** 7-22, 15-19 Indicate where radiologically released waste would be disposed. The lack of sampling required for the concrete cannot be decided until a disposal option is identified. **DOE-RL/WHC Response:** See response to comment 227.	229. Concur October 6, 1994
230.	**Comment:** 7-22, 28 Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record. **DOE-RL/WHC Response:** See response to comment 227.	230. Concur October 6, 1994
231.	**Comment:** 7-22, 30-32 Section 7.2.8 does not exist. Modify text to correct error. **DOE-RL/WHC Response:** It should have been listed as Section 7.3.4.8. See response to comment 227.	231. Concur October 6, 1994
232.	**Comment:** 7-22; 41-49 Include applicable section or entire manual, of appropriate date, of internal manuals cited in closure plan or administrative record.	232. Concur October 6, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: This list of documents will be added to Chapter 9.0. Section revised to state that there are no waste handling activities associated with RCRA closure of the Expansion Ponds. As was discussed in the 8/23/94 meeting with Ecology, no waste will be disposed of under this closure plan, therefore the section on handling and disposing of waste will be revise to stated such. If waste is to be removed, the applicable state and federal regulations will be followed.	
233.	**Comment:** 7-23, 11-13 Clarify if the safety analysis report is used for dangerous waste, or only for mixed waste. **DOE-RL/WHC Response:** As is stated in the closure plan, the safety analysis report for packaging will be used for any container that will be used to transport materials containing radioactive waste. See comment 232. Reference to Safety Analyses Reports has been deleted.	233. Concur October 6, 1994
234.	**Comment:** 7-25, 23 Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record. **DOE-RL/WHC Response:** The reference is listed in Chapter 9.0. It is a released document that is available to the public. The version current at the time of use will be used. See comment 232. Reference to this document has been deleted.	234. Concur October 6, 1994
235.	**Comment:** 7-25, 38-40 The continued monitoring of groundwater will be required as a function of the post-closure permit for the main pond and ditch, if clean closure cannot be demonstrated. It will also be maintained in order to monitor discharges to the expansion ponds (if clean closed) and to assess potential impacts of adjacent water discharges (W-049) or extractions (pump and treat).	235. Concur October 6, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: The reader will be referred to Chapter 5.0 for groundwater monitoring information.

Text will be added to state: Monitoring of site groundwater is an active program that will continue following closure in support of the of the 216-B-3 Main Pond and the 200-BP-11 operable unit investigation (unless directed otherwise by Ecology). The groundwater monitoring program is described in Chapter 5.0.

236. **Comment:** 7-25. 42-51 The location of the closure plan identified appears incorrect. Would it not be maintained in the administrative record room or the technical library. If the location specified is correct, provide a room, and/or contact within the building.

236. Concur August 23, 1994

DOE-RL/WHC Response: Text will be changed to:

> The following office (or its successor) is the official contact for the 216-B-3 Expansions Pond:
>
> Office of Environmental Assurance, Permits, and Policy
> US Department of Energy
> Richland Operations Office
> Federal Building
> 825 Jadwin Ave.
> PO Box 550
> Richland, Washington 99352

To remain consistent with other closure plans no additional information will be provided. By contacting the above office, the public will be directed to the proper location to review the closure plan.

No.	Comments/Response	Concurrence
237.	**Comment:** 7-26, 3-4 Address the disposition of the plan once closure is complete and certified. **DOE-RL/WHC Response:** Once closure is complete, the closure plan will be maintained as part of the administrative record for the 200-BP-11 Operable Unit.	237. Concur August 23, 1994
238.	**Comment:** 7-26, 21-23 Clarify why WHC would not be a signatory to the closure, as they are in other Hanford Dangerous Waste management permits. Also the form provided in the closure plan (F7-4) includes a signature block for a USDOE representative. Page iii WHC identified as a "co-operator", **DOE-RL/WHC Response:** Westinghouse Hanford Company is not listed as a signatory in any other Hanford Closure Plan. WAC 173-303-610(6) states that the "owner or operator" must sign the certification. For the 316-B-3 Expansion Ponds, DOE-RL will sign as the owner.	238. Concur October 6, 1994
239.	**Comment:** Chapter 7 Figures It would be helpful if one map indicating the location of all samples, including local background, which distinguishes the different sampling phases could be included with those figures already presented. Also cross-sectional maps, especially for Phase 3 sampling, would be helpful. Such maps should indicate on legend: depth of sampling, estimated depth to water table, the estimated change in distance to the water table, and the depth of all wells and piezometers around the units indicating which are functioning. **DOE-RL/WHC Response:** Information on piezometers is given in Chapter 2.0, and in figure 2-12. A figure showing the locations of the soil samples from all the sampling efforts will be prepared and included as figure 7-1.	239. Concur. October 6, 1994

No.	Comments/Response	Concurrence
240.	**Comment:** Tables All tables in chapter 7 need descriptive titles. By looking at the tables, it is impossible to determine which table is applicable to what sampling event, or laboratory. From the text, it was not clear that all samples were analyzed utilizing the same parameters. **DOE-RL/WHC Response:** The tables will be deleted from the chapter and replaced with tables that compare the maximum concentration found for the individual analytes from each sampling phase with current performance standards. Also, in the text the reader will be referred to the appropriate appendix for the information found in the original tables.	240. Concur. August 23, 1994
241.	**Comment:** T7-2 U.S. Testing Co. method is not descriptive enough. Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record. **DOE-RL/WHC Response:** Information is not available; however, table is being deleted.	241. Concur August 23, 1994
242.	**Comment:** T7-5 U.S. Testing Co. method is not descriptive enough. Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record. **DOE-RL/WHC Response:** Information is not available; however, table is being deleted.	242. Concur August 23, 1994

No.	Comments/Response	Concurrence
243a.	**Comment:** In light of the deficiencies noted in the closure plan above, especially groundwater. A more appropriate and realistic postclosure plan must be developed for the expansion ponds. This chapter does not address postclosure activities associated with the expansion lobes, but appears to be an excerpt from the main pond and ditch closure plan. **DOE-RL/WHC Response:** As previously agreed upon by Ecology, sampling data verifies that the expansion lobes that there is no contamination present in the soil, sediments, or vadose zone. In addition, the groundwater has not been contaminated by the operations of the expansion lobes. Therefore, the expansion lobes will be clean closed and a postclosure plan is not needed or required under the regulations. This chapter will be revised to reflect this fact and all information pertaining to the main pond and ditch will be deleted.	243a. Concur September 27, 1994
243b.	**Comment:** 8-1, 4-6 Disposal units must have written postclosure plans. Contingent postclosure plans are required for surface impoundments in which dangerous wastes are intended to be removed or decontaminated at closure, WAC 173-303-610(8)(a). This is further supported by the fact that the unit does not meet the liner requirements of WAC 173-303-650(2)(a)(i). Although removal of waste has not been purposed, if clean closure standards cannot be met, postclosure activities will be required. Irregardless, a contingent postclosure plan is required due to the above cited regulations.	243b. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: As there is no need to remove or decontaminate dangerous waste at the unit, because of lack of contamination as confirmed by the sampling and analyses, a contingency plan is not required by WAC 173-303-610(8)(a). Liner requirements in WAC 173-303-650(2)(a)(i) are only required for TSD units seeking final status not interim status TSD units undergoing closure. TPA 6-5 (section 6-3) states that a unit may be "clean closed" with no physical closure action. A sentence will be added to state that if clean closure is not achieved then the closure plan will be revised to address requirement of WAC-173-303-610(q)(b).	
244.	**Comment:** 8-1, 6-12 It is inappropriate to discuss "other portions' of the unit. This is misleading due to the fact that the unit referred to is two distinct units, independent of each other. The focus here is on the expansion ponds postclosure plan, not on the main pond and ditch, or on the preexisting unit as a whole. **DOE-RL/WHC Response:** This chapter will be revised to reflect the fact that the expansion lobes are a distinct TSD unit.	244. Concur September 27, 1994
245.	**Comment:** 8-1, 17 Use a term that clearly identifies the unit being addressed in place of the term "facility". An inspection schedule needs to be proposed. Specify if the contingent postclosure period is proposed to be 30 years. If not 30 years, provide justification for allowing a shorter postclosure period. **DOE-RL/WHC Response:** Accept. Term is inappropriate. The 216-B-3 Expansion Ponds are recognized as a TSD unit. The expansion lobes will be clean closed and a postclosure plan is not applicable. See comment 243b.	245. Concur September 27, 1994
246.	**Comment:** 8-1, 28-35 Include waste containment system in the bulleted list of items to be inspected. Specify if these visual inspections will be the only evaluation of the groundwater monitoring systems adequacy.	246. Concur. September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The expansion lobes will be clean closed and a postclosure plan is not applicable. See comment 243b.	
247.	**Comment:** 8-1, 45-47 The requirements of both WAC 173-303-645, and FFACO Milestone 24 would be conditions of the postclosure permit.	247. Concur September 27, 1994
	DOE-RL/WHC Response: The expansion lobes will be clean closed and therefore these citations do not apply.	
248.	**Comment:** 8-2, 29 Delete the "(a)" after the WAC 173-303-610 citation.	248. Concur September 27, 1994
	DOE-RL/WHC Response: Section deleted. The comment no longer applies to the text.	
249.	**Comment:** 8-3, 5 The phrase "in fee simple" is not familiar. Removal of the phrase would maintain the meaning of the statement without confusing readers.	249. Concur September 27, 1994
	DOE-RL/WHC Response: This is a standard legal phrase for the purchase of land. However, the expansion lobes will be clean closed and a postclosure plan is not applicable. See 243b.	
250.	**Comment:** 8-3, 10-11 Delete the "Pond System" and replace with expansion ponds. Also delete the phrase "under the terms of regulations promulgated.. Ecology (whichever is applicable)," due to the fact that many wastes were disposed of at the unit, prior to USDOE conforming to environmental regulations due to their position that they were exempt.	250. Concur September 27, 1994
	DOE-RL/WHC Response: Chapter revised. See comment 244. This specific text has been deleted.	
251.	**Comment:** 8-3, 16 The WAC citation should be WAC 173-303-610(10)(b), not (7)(d). The federal citation was not checked.	251. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: All specifics on Postclosure care/requirements will be deleted form this section. the Introduction will be expanded to state that if postclosure care becomes required, WAC 173-303-610(1)(b) requirements will be addressed.	
252.	**Comment:** 8-3, 19-22 The second portion of the paragraph starting with "and ascertain" does not appear consistent with the requirements of WAC 173-303-610(10)(b) which requires the owner or operator to.. notify potential purchaser through some instrument which is normally examined during title search. Therefore, delete this paragraph.	252. Concur September 27, 1994
	DOE-RL/WHC Response: See response to comment 251.	
253.	**Comment:** 8-3, 24-30 This paragraph is confusing. First, it states the survey plat has been filed. The survey plat is required to be filed within sixty days of certification of closure. Second, the phrase in parenthesis "whichever are applicable" implies that USDOE is not sure who to file the survey plat with even though they say they have already filed it. Rewrite paragraph after confirming if, and when, and to whom, the survey plat was filed.	253. Concur September 27, 1994
	DOE-RL/WHC Response: See response to comment 251.	
254.	**Comment:** 8-3, 41-42 Specify how long, and where, documentation will be retained.	254. Concur September 27, 1994
	DOE-RL/WHC Response: See response to comment 251. Closure plan will be maintained as stated in revised section 7.3.	
255.	**Comment:** 8-3, 44-45 USDOE cannot independently self-certify completion of postclosure. Both the owner and operator, and an independent registered professional engineer must sign the certification of completion of postclosure, WAC 173-303-610(11).	255. Concur September 27, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The expansion lobes will be clean closed and a postclosure plan is not applicable.	
256.	**Comment:** 8-4, 1-14 This section should be incorporated with the previous section. See previous comment. **DOE-RL/WHC Response:** This text is revised. This section no longer in the revised text.	256. Concur September 27, 1994
NOTE:	**The following comments on Chapter 5 "Groundwater Monitoring" were from the NOD table sent from Ecology on August 8, 1994. The closure plan originally submitted for review contained an obsoletet version of Chapter 5. A revised version was submitted and the following NOD comments and responses refer to that revised chapter.**	
257.	**Comment:** 5-1, 9 The separations area depicted in Figure 5-1 includes the B Pond system. The text states that the Expansion Ponds are east of the separations area. Modify text to state that the Expansion Ponds are located within the eastern portion of the separations area or modify Figure **DOE-RL/WHC Response:** Agreed--Text has been modified. The Expansion Ponds are part of the B Pond System and are located in the eastern part of the Separations Area (Figure 5-1).	257. Concur October 3, 1994
258.	**Comment:** 5-1, 10 It is recommended that it be indicated at this point that the B Pond system consists of two RCRA TSDs. **DOE-RL/WHC Response:** Agreed--Text has been modified. The B Pond system consists of two RCRA TSD units which consists of four earthen, unlined, interconnected ponds and the 216-B-3 Ditch.	258. Concur October 3, 1994

No.	Comments/Response	Concurrence
259.	**Comment:** 5-1, 21 Dividing the B Pond system into two TSDs will not allow clean closure of the Expansion Ponds. Having separate Part A, Form 3's will make clean closure a viable option to be pursued for the Expansion Ponds. Separating the TSD into two units has little impact on integration of the TSD and the past-practice unit. Modify text accordingly. **DOE-RL/WHC Response:** Agreed--Text modified. This change was made so clean closure was an option for the expansion ponds. Changes to text as follows: line 20 and 21, add "application" after permit and add "permit application" after form 3, add "'s" to 3 and delete "applications" after form 3. Line 24 after option and before period add "for the expansion ponds"	259. Concur October 3, 1993
260.	**Comment:** 5-1, 25 The term "clean" is not descriptive. Stipulate if the vadose zone analytical data verify that dangerous waste or dangerous waste constituents or residues do not exceed levels specified in WAC 173-303-610(2)(b)(i) and (ii). changes to text as follows: Line 26 change "analyses" to "Analytical"; Line 28 add new sentence to make the regulation callout less confusing. place a period after (ii), delete the comma. Add" The analytical results are presented in more detail in Chapter 7, Closure Activities, Section 7.1.5 and in Appendix C, Phase 1 Sampling Results." The section callout is still the same. **DOE-RL/WHC Response:** Agreed--Text modified	260. Concur October 3, 1994

No.	Comments/Response	Concurrence
261.	**Comment:** 5-1, 26-32 This section of the closure plan describes the TPA designation of the groundwater operable units located under the B Pond system. The following information must be addressed in the closure plan in regard to the contaminated groundwater plume. The TPA. section 5.5, states "past-practice authority may provide the most efficient means for addressing mixed-waste groundwater contamination plumes originating from a combination of TSD and past-practice units. However, in order to ensure that TSD units within the operable units are brought into compliance with RCRA and state hazardous waste regulations, Ecology intends, subject to part four of the Agreement, that all remedial or corrective actions... will be conducted in a manner which ensures compliance with the technical requirements of the HWMA (Chapter 70. 105 RCW and its implementation regulations). In any case, the parties agree that CERCLA remedial actions, and as appropriate HSWA corrective actions will comply with ARAR" The TPA, section 6.3.1, states "any demonstration for dean closure of a disposal unit... must include *documentation* that *groundwater* and soils have not been adversely impacted by that TSD group/unit, as described in 173-303-645 WAC The TPA, section 6.3.2, states 'the radionuclide component of the waste will be addressed as part of the closure action.' Therefore, the tritium plume shall be addressed in this unit or the Main Pond closure plans. 'For this unit to be considered for clean closure, there must be an explicit commitment in the closure plan that the groundwater will be addressed in a timely manner by all applicable regulations (i.e., WAC 173-303, 40 CFR 270.1). Provide text to elaborate on rationale.	261. Concur October 3, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Agreed section will be rewritten. Changes: Line 30, add after Milestone "M-" to 13-06A; Line 42 after likely add "stream"; Line 43, after administrative add "controls"; Line 45, after Administrative add "controls" after engineering add "barriers" delete controls; Line 47, delete "sewered" replace with discharged; Delete from line 32, to line 39, starting with "Technology develoopment" on line 32.	
262.	**Comment:** 5-2, 21 The closure plan states that assessment-level monitoring was initiated in 1990. The Annual Groundwater Report, 216-B-3 Pond System section, states the B Pond system was elevated to assessment-level monitoring due to elevated concentrations of TOX in well 699-43-4 IE, and that during 1990 well 699-43-4 IF also exhibited high concentrations of total organic halogen (TOX) and total organic carbon (TOC). Verify and modify text accordingly. In addition, explain the regulatory drivers for, or refer to the section that explains initiating assessment-level monitoring. **DOE-RL/WHC Response:** Agreed text modified. The first mention of assessment is introductory. More detail is given on page 5-8, line 5. INSERT 1: "In early 1994 it was discovered that laboratory blanks for TOC, dating back to early 1993, had consistently produced results of 200 ppb TOC. Therefore, results for TOC reported during that time period indicate lab contamination and may not have necessarily indicated groundwater sample results above CRQL or detection limits.' INSERT 2: "In accordance with 40 CFR 265.93 (d)(2), ... "	262. Concur October 3, 1994

No.	Comments/Response	Concurrence
263.	**Comment:** 5-2, 30 Confirm that documents cited in the closure are incorporated into the Administrative Record file for the 216-B-3 Expansion Ponds. **DOE-RL/WHC Response:** Confirmed that documents cited are included in the AR.	263. Concur October 3, 1994
264.	**Comment:** 5-2, 44 Confirm that documents cited in the closure are incorporated into the Administrative Record file for the 216-B-3 Expansion Ponds. **DOE-RL/WHC Response:** Confirmed that documents cited are included in the AR.	264. Concur October 3, 1994
265.	**Comment:** 5-3, 3 The text states that 25 wells are included the monitoring network. Twenty two wells were located in Figure 5-4, plus 2 background wells not shown in the figure, equals 24 wells. Confirm number of wells and/or modify text accordingly. **DOE-RL/WHC Response:** Agreed, Figure 5-4 has been changed. Number of wells is 25. One well (699-43-45) is cut off by the edge of Figure 5-4. The figure has been corrected. TEDB, Treated Effluent Disposal Basin, was added to Acroynm list.	265. Concur October 3, 1994
266.	**Comment:** The water table map provided in Figure 5-5 does not substantiate the location of the background wells (outside the influence of the groundwater mound). Provide text to elaborate on rationale	266. Concur October 3, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Agreed, text modified. INSERT 3: "Closer examination of hydraulic conditions in the 200 East Area shows that the upgradient wells cannot be demonstrably affected by the B Pond groundwater mound. Furthermore, patterns of groundwater chemistry at RCRA units that lie between B Pond System and the upgradient wells indicate that influence of B Pond System upon the upgradient wells is not possible (e.g., Kasza, 1994).'	
267.	**Comment:** 5-3, 43 The adequacy of the monitoring network must be assessed prior to closure. **DOE-RL/WHC Response:** Agreed text modified. INSERT 4: "The adequacy of the groundwater monitoring network is assessed on a quarterly basis, at a minimum. Modifications to the well network or groundwater sampling schedule are made, as necessary, with reference to the appropriate regulations and regulator concurrence by the RCRA Project Scientist in charge of the 216-B-3 Pond groundwater monitoring."	267. Concur October 3, 1994
268.	**Comment:** Neither the closure plan nor the Annual Groundwater Report, do not clarify Why the five down gradient wells discussed here are sampled at a different interval than the remaining down gradient wells. The discussion provided here is not consistent with the Annual Groundwater Report, Table 4.5-1, which lists only four down gradient wells are sampled semiannually. Verify the number of down gradient monitoring wells sampled semiannually and explain why wells are sampled at different intervals. Explain the reason and the significance of initiating quarterly groundwater sampling and analysis. Unable to locate well 699-42-40 on Figure 5-4.	268. Concur October 3, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Agreed text modified. INSERT 5 (REPLACE EXISTING TEXT): "Groundwater samples are currently collected on a quarterly basis from all 25 wells in the 216-B-3 Pond monitoring network." (Well should have been 699-42-41, not 42-40) change figure 5-4	
269.	**Comment:** Title 40 Code of Federal Regulations (CFR) Part 265.93 require a groundwater monitoring program capable of determining; whether hazardous waste or hazardous waste constituents have entered the groundwater, the rate and extent of migration, and the concentration of 5-6, 340 contaminants in the groundwater. Sampling and analysis for 40 CFR 264, Appendix IX, and WAC 173-303-9905 lists must be conducted prior to closure of the TSD unit and must be conduct at a frequency which will allow statistical evaluation of the results. In addition, the Annual Groundwater Report states that all wells in the network have now been sampled for Appendix IX constituents at least once, including the wells shared with W-049 TEDB. The report makes no reference to WAC 173-3039905 constituents. Verify the analyte list and revise the closure plan accordingly. Determine if any wells have been, or are planned to be, resampled and analyzed for Appendix IX constituents. Summarize any contaminants detected from this analysis.	269. Concur October 3, 1994

No.	Comments/Response	Concurrence

DOE-RL/WHC Response: Unable to confirm that the list in WAC 173-303-9905 must be sought in groundwater sampling for RCRA facilities. The statement to that effect should be amended to include only the Appendix IX list. Changes have occurred (and are still occurring) in the sampling and analysis schedule since the writing of this document began. The entire paragraph in question should be rewritten as follows:

INSERT 6: "Groundwater samples are analyzed for parameters required by 40 CFR 265.92 (EPA 1989b), volatile organic compounds, semi-volatile organic compounds, and tritium. Hydrazine and ammonium were also sought until recently, but several years of analyses have indicated these compounds are not present in groundwater at the 216-B-3 Expansion Ponds. Subsequently, analyses for hydrazine and ammonium were discontinued. If Appendix IX list constituents were confirmed in groundwater samples, these were added to the regular list of constituents for quarterly sampling of all downgradient wells in the network. Thus far, only one compound from this list, tris-2-chloroethyl phosphate (a semi-volatile organic compound), has been discovered to occur in groundwater at the site of 216-B-3 Pond. This compound appears to occur regularly in certain wells, but at low concentrations (see Section 5.1.3.2)."

INSERT 7:Tris-2-chloroethyl phosphate has been detected in five wells at the 216-B-3 Expansion Ponds (see Table 5-8), but the origin of this compound in the groundwater is unknown at present. [well 699-43-41E should be removed from this table--the result shown (178 ppb) was rejected]

No.	Comments/Response	Concurrence
270.	**Comment:** 5-7, 3 The Annual Groundwater Report addresses the detection of TOX contaminants in various B Pond monitoring wells, but it does not identify total organics as a site specific parameter (table 4.5-2 report). This is inconsistent with the text provided in the closure plan. Verify parameters and/or modify text if necessary. **DOE-RL/WHC Response:** Agreed text modified; Some of the information in the "Annual Groundwater Report" (such as the site-specific parameters list) is already outdated. Tritium is the only sitespecific parameter that currently remains in the list. Text is modified accordingly. Text on how site specific parameters are determined added at 5.1.2.6	270. Concur October 3, 1994
271.	**Comment:** 5-7, 7 The closure plan states that Appendix IX and WAC 173-303-9905 constituents have been sampled and analyzed. The Annual Groundwater Report states that all wells in the network have now been sampled for Appendix IX constituents at least once, including the wells shared with W-049 TEDB. The report makes no reference to WAC 17:1-:10:]-9905 constituents. Verify analyte list and/or revise the closure plan accordingly. **DOE-RL/WHC Response:** Constituents of the WAC 173-303-9905 were not sought--text is in error. Text is modified accordingly, where necessary.	271. Concur October 3, 1994
272.	**Comment:** 5-8, 1 Document format is inconsistent on this page. This comment is in reference to the second line 1 of this page. Secondary Maximum Contaminant Levels in 40 CFR 143 is cited here in the discussion of Manganese and Iron. This is not consistent with the Groundwater Report (p. 4.5-8,9, 12), which cites 40 CFR 265.92, which refers only to Appendix Iii, Primary Drinking Water Standards.	272. Concur October 3, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: The reviewer's comment is incorrect with respect to iron and manganese. These constituents are included in 40 CFR 265.92 (to establish groundwater quality, though no MCLs are given) and 40 CFR 143 as secondary drinking water standards. There is also some overlap in Primary and Secondary drinking water standards, but this document is not the place to discuss regulatory redundancy.	
273.	**Comment:** 5-8, 5 Document format is inconsistent on this page. The comment is in reference to the second line 5. The Annual Groundwater Report, Drinking Water parameters presented list silvex cadmium, not cadmium,as an analyte. This is not consistent with the Appendix III of 40 CFR 265, Interim Primary Drinking Water Standards, which lists cadmium. According to Hawley's Condensed Chemical Dictionary, Silvex is defined as a restricted use herbicide and plant growth regulator. No association with cadmium is indicated, nor is cadmium a component of the compound. Verify if cadmium is being analyzed as a drinking water parameter. If indeed Silvex cadmium is the analyte, explain why cadmium D006 is not a site specific parameter due to the fact that it is listed on the Part A, Form 3, for the Expansion Ponds. **DOE-RL/WHC Response:** Agree text modified; "Silvex cadmium" is a typographical error in the annual groundwater report. Both cadmium and silvex are in the analytical list for drinking water parameters.	273. Concur October 3, 1994

No.	Comments/Response	Concurrence
274.	**Comment:** 5-8, 29 This paragraph addresses the source of the tritium contaminating the underlying aquifer. The closure states 'the shape of the plume through time indicates that the 216-B-3 Pond also contributed.' There is no discussion of the Expansion Ponds contribution. This leaves one to speculate if Expansion Ponds contributed to the tritium plume or not. Modify the text to explain the Expansion Ponds contribution to the tritium plume. In addition, if it is presented that the Expansion Ponds did not contribute to the plume, address the presence of the plume under the Expansion Ponds and the continued detection of tritium in the monitoring wells surrounding the Expansion Ponds (see Annual Groundwater Report p. 4.5-1). Note: The TPA, section 6.3.2, states 'the radionuclide component of the waste will be addressed as part of the closure action.' Therefore, the tritium plume will be addressed. **DOE-RL/WHC Response:** The following will be added to text: INSERT 8: All records indicate that tritium discharges to the main pond of 216-B-3 Pond ceased before construction of the expansion ponds. Tritium is detected in wells adjacent to the expansion ponds because groundwater containing tritium has migrated from its original point of infiltration beneath the main pond.	274. Concur October 3, 1994

No.	Comments/Response	Concurrence
275.	**Comment:** 5-11, 37 Explain how it has been determined that clean closure is possible for the Expansion Ponds despite the fact that TOX and TOC hits, which initiated assessment monitoring, were detected in monitoring wells located adjacent to Expansion Ponds. Again, the contribution of the Expansion Ponds has not been addressed. Modify text accordingly. **DOE-RL/WHC Response:** The following will be inserted: INSERT 9: The exact point of entry of effluent(s) that may have contributed to elevated TOX and TOC cannot be determined. Since the 216-B-3 Pond System began operation, groundwater has flowed radially away from the point of infiltration, roughly beneath the main pond. Thus, any entrained contaminants may be detected in any monitoring well within the hydraulic influence of the this flow regime. Soils analyses do not indicate that the expansion ponds contributed to elevated TOX/TOC (see Sections 6 and 7, and Appendices C, D, and E). 5-13,30	275. Concur October 3, 1994
276.	**Comment:** 5-19, 11 The reference to Figure 5-12 is incorrect. The information is discussed in Figure 5-13, not Figure 5-12. Revise text accordingly. **DOE-RL/WHC Response: Corrected**	276. Concur October 3, 1994
277.	**Comment:** 5-21, 17 The reference to Figure 5-12 is incorrect. The information is discussed in Figure 5-13, not Figure 5-12. Revise text accordingly.	277. Concur October 3, 1994

No.	Comments/Response	Concurrence
	DOE-RL/WHC Response: Corrected	
278.	**Comment:** 5-24, 34 Well 699-43-45 is not located in Figure 5-4. Please verify its location and modify Figure 5-4 to incorporate, or modify text to explain why it is not included in Figure 5-4. **DOE-RL/WHC Response:** Agreed, Figure 5-4 Modified.	278. Concur October 3, 1994
279.	**Comment:** Well 699-43-32K is not located in Figure 5-4. Please verify its location and modify Figure 5-4 to incorporate, or modify text to explain why it is not included in Figure 5-4. **DOE-RL/WHC Response:** Text is modified. It is not feasible to show the piezometer (well 699-4332K in the figure.	279. Concur October 3, 1994
280.	**Comment:** 5-27, 33 This paragraph addresses the tritium plume associated with the separations area. There is no discussion of the Expansion Ponds contribution to the contamination. This leaves one to speculate if Expansion Ponds contributed or not. Modify the closure to address the Expansion Ponds contribution to the tritium plume. In addition, if it is presented that the Expansion Ponds did not contribute to the plume, explain the presence of the plume in the aquifer under the Expansion Ponds and the continued detection of tritium in the monitoring wells surrounding the Expansion Ponds (see ground water report p. 4.5-11 Note: The TPA, section 6,3.2, states "the radionuclide component of the waste will be addressed as part of the closure action.' Therefore, the tritium plume will be addressed. **DOE-RL/WHC Response:** This comment is addressed in the response to comment 18.	280. Concur October 3, 1994

No.	Comments/Response	Concurrence
281.	**Comment:** 5-28, 5 Well 699-42-40C is not located in Figure 5-4. Please verify its location and modify Figure 5-4 to incorporate, or modify text to explain its location and why it is not included in Figure 5-4. **DOE-RL/WHC Response:** Text is modified to explain absence of the well.	281. Concur October 3, 1994
282.	**Comment:** 5-28, 15 In addition to the text provided, address the tritium plume located under the Expansion Ponds. **DOE-RL/WHC Response:** This issue is adequately addressed by discussions in earlier sections (as discussed in comments 18 and 19). Reference will be inserted to draw readers attention to these discussions. New References Kasza, G.L., 1994, "216-A-36B Crib" in *Annual Report for RCRA Groundwater Monitoring Projects at Hanford Site Facilities for 1993*, DOE/RL-93-88, Rev. 0, U.S. Department of Energy, Richland Field Office, Richland, Washington.	282. Concur October 3, 1994
283.	**Comment:** In addition to the text provided, address the tritium and other contaminants detected under the Expansion Ponds. **DOE-RL/WHC Response:** Same as 282.	283. Concur October 3, 1994